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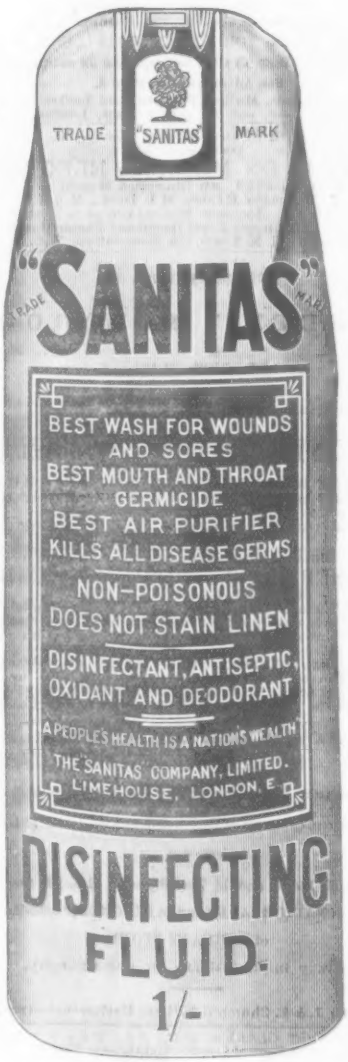

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An Address
ON
HEREDITY AND INHERITANCE AS THEY CONCERN THE PHYSICIAN.

Delivered before the Birmingham Society for the Study of Heredity

BY CHARLES MERCIER, M.D. LOND., F.R.C.P. LOND.

MR. PRESIDENT AND GENTLEMEN,—I take it that in inviting a physician, whose profession embraces a very outlying region of biology, to address you on the central theme of this science, which is not his proper subject, and as to which he is an outsider, your object is to learn what bearing the great problems of heredity and inheritance have upon the practice of the physician; how far they influence his views of the nature of disease; how far they modify in his opinion the fate of his patients; and how far and in what way he takes them into account in the advice he gives. This, I say, is my surmise; but it may be that you merely had in your minds an address that I gave in this city a year ago, and based your invitation on the ground that however erroneous the doctrine might be, you would at least hear something racy. If this was your intention I am afraid you will be disappointed. I have nothing to tell you that is not quite humdrum and not much that you have not heard before.

As I have said, I am not an expert in that central realm of biology that includes the problems of heredity and inheritance; but at the same time, in my capacity as a physician engaged in the treatment of mental disease, I have constantly to take these problems into account, for it is impossible, I will not say to understand these diseases, for I do not profess to understand them, but it is impossible in many cases to form a trustworthy opinion or to give trustworthy advice without taking heredity and inheritance into account.

EUGENICS.

We hear a great deal nowadays about eugenics, and some of us hear so much about it that we get rather tired of aspirations, praiseworthy, no doubt, but for the most part extremely vague, for the coming of a millennium in which marriages will be arranged by a committee of experts—an expert, I may explain, is a person who is omniscient on one subject and knows very little about any other: I ought to know, for I am myself an expert—a committee of experts on human breeding. Breeders of livestock breed for the most part for single qualities or for simple combinations of qualities—they breed cows with an eye to milking capacity, steers for rapid growth and early maturity, poultry for feather and comb, or perhaps for laying fertility, hounds for speed and scent, and so forth; but the controllers of eugenics in the human race are to breed for a vast number of complex qualities, and to breed for them all at once. They are to breed for physical robustness and capacity to resist disease, for physical beauty, for moral elevation, for intellectual genius, and manual dexterity; the representative of the army on the board of eugenics will insist on breeding for courage and bellicosity; the representative of the navy for agility and immunity from sea-sickness; the representative of commerce will look to pushfulness and skill in bargaining; the representative of the Church will breed for ability to conduct clubs for working men and mothers' meetings; the representative of art will breed for ability, if not to paint pictures, at least to buy and pay for them; and all will combine to produce a breed of physicians who will practise without desiring fees. I speak with confidence and with knowledge of the subject when I say that some of these ideals are impracticable. No one has greater faith in eugenics than I have, especially when eugenics is spelt with a large E and is controlled by the State. We see in everything, from the treatment of suffragettes to the administration of the telephones, how vastly superior is State regulation to the enterprise of private individuals.

A Hypothetical Case as to the Expediency of Marriage.

Eugenics has a peculiar interest for me, because I am often asked to advise on the expediency, from an eugenic point of view, of a marriage. I have no reason to believe that my advice is ever taken, but it is often asked for, and sometimes even paid for, and therefore I have no reason to complain. It sometimes happens, and cases of the kind may have come under the observation of some of those here present, that a young man, who may even be middle-aged, becomes enamoured of a young woman to such a degree that he becomes engaged to marry her. And it sometimes happens—and again some of you may be able to corroborate my statement—that after a certain length of engagement he realises the truth of that wise prediction expressed by a neighbouring nation in the well-known words:—

> Tu t'en repentira, Colin,
> Tu t'en repentira;
> Car si tu prends une femme, Colin,
> Tu t'en repentira.

In such a case several courses are open to the penitent. He may flee to foreign parts; he may stand the racket of an action for breach of promise; or he may, and often does, come to me and say: "Doctor, I have conscientious scruples. My family positively reeks of insanity. My father's second cousin's first husband drank a barrel of beer a day, and ended his life by spontaneous combustion. This being so, is it not certain that if I marry dear Jemima Brown I shall certainly go raving mad and cut her into little bits? At the present moment I feel so frightfully nervous that if you give me a certificate to this effect I feel confident that I shall so far forget myself as to double your fee." These may not be his precise words, perhaps, but this is the purport of the confidences that I sometimes receive when I am asked to give an opinion on an individual case of eugenics.

The Biometric and Mendelian Methods.

My rule is to decide all cases on general principles, and in accordance with this rule I consult the works of acknowledged authorities for guidance. First I turn to that eminent statistician and biometrician Professor Karl Pearson, and I obtain from him the following apt information: Supposing X to be the character in the parent, and Y the mean character in the offspring, then the equation is

$$Y = A + B \cdot X,$$

where A is a dimension of the same nature as X or Y, and B is a number that will vary from case to case. My difficulty is to know what particular variation of B applies to the case before me; and as Professor Karl Pearson tells me nothing about this, I am unable to apply the formula, and am obliged to turn to his rival and antagonist, Professor Bateson, to see what light the laws of Mendel will throw upon my difficulty.

From Professor Bateson I learn that when a dominant is crossed with a recessive the offspring will all exhibit the dominant character; but in the next generation the dominants will be to the recessives as 3 : 1, and of the three dominants only one will be a pure dominant, the others having the recessive character latent. It is perhaps my density which prevents me from learning from these premisses whether the fact of his father's second cousin's first husband's having drunk a barrel of beer a day will cause Mr. Jones to cut Jemima Brown into little bits in case they should be united in the bonds of holy matrimony. Perhaps it is my density, and I may be unduly biassed in my own favour when I decide that it is not, and that neither the laws of Mendel nor the equations of biometry are of the slightest value in the determination of individual cases. It is manifest on the face of them that they cannot be, and for this reason. The methods of Galton and Pearson are applicable to large numbers, and to large numbers only, and do not yield results that are even approximately true until the numbers become very large. To apply biometrics to individual cases is much like comforting a convicted and condemned murderer by saying, "Cheer up! There are only 15 persons hanged every year in this country out of a population of 40 millions; so that it is 2,666,666·6, &c., to 1 that you won't be hanged!"

The Mendelian method of Professor Bateson is equally inappropriate. It tells me that if the father of my patient was a drunken lunatic, and his mother was a paralysed dement, and if the father's drunkenness is dominant and lunacy recessive, while in the mother paralysis is dominant and dementia recessive, and if they have 16 children, then the chances are that nine children will be paralysed drunkards, three will be demented drunkards, three will be paralysed lunatics, and one will be a demented lunatic. This is very interesting, but it is not what I want to know

I want to know what the chances are that poor Jemima Brown will be cut into little bits in the improbable event of her compelling Mr. Jones to marry her.

Inutility of Biometrics and Mendelism to the Practising Physician.

I have chosen an outside case to illustrate the thesis that I wish to establish, which is that neither biometrics nor Mendelism is of the slightest value to the practising physician. Mendelism has proved its utility in another field by enabling breeders to produce certain strains of wheat and other stock that could not have been produced, or could not have been so rapidly produced, without its aid; and biometrics has no doubt its value in another field by showing the general trend of variation in a large population; but neither of them can be applied to individual cases, and as it is with individual cases that the physician is concerned, neither of them has the slightest value for the physician, and as a physician he is no better off than if Galton and Pearson and Mendel and Bateson had been untimely births which never saw the light.

Seeing that I have already declared that a physician practising in mental disease cannot practise efficiently without taking into account both heredity and inheritance, and seeing that I have now declared that the two accepted—and may I say fashionable?—methods of investigating the facts of heredity and inheritance are quite useless to him, the question arises, What is his attitude to these problems? How does he take them into account? What are the aspects of them that he has to consider?

THE NATURE OF REPRODUCTION.

In order to answer these questions I must lay before you two hypotheses, I think I may go so far as to call them theories, of my own, which I formulated nearly a quarter of a century ago, and which have received, as far as I know, no attention at all, though both are of immediate practical importance. For some reason or other no one takes my doctrines seriously; at any rate, until they are adopted by some German, and are reintroduced into this country as made in Germany.

Characters of Germ and Sperm Cells.

My first proposition is this: Setting aside parthenogenesis, the alleged cases of which that come before the physician being found on investigation to be mythical, all reproduction is due to the union of a male element with a female element—of a sperm cell with a germ cell. My hypothesis is that the contributions of these two elements to the product differ in this way: the female element contributes the substance or matter of the offspring; the male element contributes the force or energy that animates the matter. The female element is the coals in the grate; the male element is the match that sets them alight. The female element is the great mass of dough in the kneading-trough; the male element is the little bit of yeast that leavens the whole lump and sets it all fermenting. The evidence in favour of this view seems to me overwhelming. In the first place, the disparity in bulk of the two elements is very great. The egg cell is of appreciable magnitude. In many organisms it is even visible to the naked eye. The sperm cell is excessively minute. In some cases the disparity is as great as 100,000 to 1. In the beginning and from the beginning, therefore, the female element does, in fact, contribute substance or matter out of all proportion to the amount contributed by the male. In the second place, the female element is lethargic and non-locomotor. It has no power of spontaneous movement, or even of change of shape. The only evidence of life that it gives is the preservation of its structural integrity, which is but brief, and its growth, which soon comes to an end. Its part is vegetative—anabolic. The sperm cell is the very opposite of this. It is extraordinarily active. It is rapidly locomotor. It incessantly changes its shape. Its life, which is prolonged, is one of eager, strenuous, and incessant activity. It is the very embodiment of energy.

The Developmental Impetus given by the Sperm Cell.

Now note the result of their union. Before it is fertilised, or as I should rather say energised, by the sperm cell, the germ cell has an inert and vegetative existence. As it is alive, it must contain some stored energy or motion, for this is the character of all living things, but the motion that it contains is potential only, and is consumed internally in making and conserving additions to its bulk. Very rarely does the mammalian ovum even undergo a single segmentation or division previous to impregnation, and if left unimpregnated it soon dies, and dies, I suggest, because the amount of motion it contains is insufficient to hold the mass in equilibrium against the action of incident forces. It dies for the same reason that a top falls when it ceases to spin. But now what happens when the minute mass of the sperm cell—a mass altogether insignificant in proportion to that of the ovum—is incorporated in its substance? At once the whole mass is infused with energy. It becomes the seat of active and incessant change. It segments and resegments incalculably. It receives, in short, an impetus that carries it forward for years upon the path of growth and of development. It is this view of conception, that regards it as the reception by the germ of an impetus to growth and development, that is so important and so fertile in the field of mental pathology. I do not deny that the germ contains within itself its own potentiality of development any more than I deny that the mass of coal in the grate contains its own potentiality of burning. Nor do I deny that the speck of matter in the sperm cell contains its own potentiality of indefinite multiplication, so that it may permeate the whole bulk of the organism, however many million times that organism may increase in bulk. I do not deny this any more than I deny that the grain or two of yeast may multiply so as to permeate the sponge in every part. And both the potentiality of the germ to develop and that of the sperm to multiply are important; but the supreme, the vital, the central fact in conception is the impetus given by the sperm to the germ, an impetus that carries the product along the path of growth to adulthood and maturity, and along the path of development until its gradual failure marks the onset of senility. It is this tremendous impetus that matters to the physician for mental disease.

The Implications of the Doctrine.

For note the implications of this doctrine and see how important they are. If you kick a football, or strike a billiard ball with the cue, or a cricket ball with the bat, you give that ball an impulse. You communicate to it an impetus. You send it flying along a path that is predetermined by the conditions. Now, this is the important thing—the distance the ball travels depends, other things being equal, upon the impetus that you communicate to it. If you hit it hard it will go far; if you hit it less hard it will go less far. It is the same with the developmental impetus that is given to the germ at conception. If the impetus is a powerful one, the germ will travel far upon the predetermined path of development and growth; if the impetus is less powerful, the germ will travel less far. If the impulse communicated by the sperm is sufficiently powerful, it will make a boundary—it will reach the boundary of the normal. If it gets a tremendous swipe, it will go far over the boundary and become the lost ball of genius. If the impulse it receives is deficient in vigour, it will not reach the boundary, but will fall short of it by a space that will be greater or less according as the impulse is more or less lacking in vigour. The impulse may expend itself in reaching early childhood, or it may suffice to attain late childhood, youth, or adolescence, and according as the development of the brain ceases at one or other of these stages, the result is idiocy, or imbecility, or feeblemindedness, or mere dulness, as the case may be.

Two important qualifications must be made here. In the first place, insufficiency of the developmental impetus is not the only cause of deficiency of mind; in the second, deficiency of mind is not the only result of a defective conceptual impetus. Original deficiency of mind, of whatever degree, from idiocy to dulness, always arises from premature cessation of the development of the brain. This needs no demonstration. It is manifest on the face of the facts. But premature cessation of development may be brought about in two ways. When a cricket ball is driven by the bat it sometimes fails to reach the boundary, and the reason it does not reach the boundary may be that it was not driven hard enough; but it may be that it was driven hard enough, but on its way to the boundary it came in contact with some obstacle, say the hand, or the head, or the abdomen of a fielder, and its course was thus brought to an abrupt termination. Similarly, the development of the brain may cease from premature exhaustion of the developmental

impetus, or it may be brought to a more or less sudden close by the intervention of some external agent which forcibly arrests it; and each of these methods is answerable for some cases of mental defect. The accidental intervention which puts a stop to the development of the brain may be a violent blow on the head, or it may be an inflammation of the membranes, or it may be the poison of some specific fever. All these may be said to have been proved by specific instances, but it is clear also that for a full development of the brain it must have an adequate supply of appropriate nourishment; and it is possible, and even probable, that some addition is made to the ranks of the mentally defective by those who are seriously underfed at the time the brain is actively developing. I say seriously underfed, for there is some evidence that the brain is not only greedy but masterful, and that it addresses to the rest of the body that straightforward and downright Dunstable maxim which we may term eutrophic, and which might well be written over the doors of the Chancellor of the Exchequer: "Thou shalt want ere I want." And I say underfed during the time the brain is actively developing because, although the brain goes on developing in some respects until it begins to deteriorate, its development does not proceed continuously. It goes by fits and starts; and this brings me to my second doctrine, which, like the rest of my teaching, has but a single adherent.

Direction of Developmental Impetus into Two Channels.

The doctrine is this: that after a certain primitive stage of development is reached, it proceeds in two paths, which are complementary to one another, and to some extent inversely proportional to each other. However great the developmental impetus may originally have been, it is limited in amount; and if it is directed into two channels, then the more that flows into one channel the less there is at the service of the other. Those of you whose houses are still lighted by gas will know that at certain hours the gas, which had been burning quietly and steadily, begins to flare and sing, and you account for the change when you remember that at that hour the public-houses close, and a large expenditure of gas is suddenly shut off, leaving an increased pressure at the service of those who are still using it. There is another illustration that I am in the habit of giving. Everyone now knows that gardeners sometimes grow fruit trees consisting of but two stems growing from a single stock. These two stems or branches are fed from a single source of nourishment, which is limited in amount, and it is clear that the more that is attracted to one stem the less there is at the service of the other. Gardeners know of several expedients by which the flow of sap may be regulated and equalised so that neither branch shall grow at the expense of the other. Now if you carry this notion in your minds you will see what I mean when I speak of mere growth in bulk and of development in complexity being complementary to one another, so that the one proceeds at the expense of the other. The more of the developmental impetus or energy that goes to build up bulk of body, the less there remains to produce complexity of development, and *vice versâ*. Now the only organ that at birth is greatly wanting in complexity of development is the brain. All the rest are then almost complete, and thereafter grow in bulk alone, so that after birth the two great competitors for the single supply of developmental energy are bulk of body and complexity of brain; and complexity of brain stands roughly for development of intelligence. If the supply of energy is of average amount, and if it is shared in equable proportion between these rivals, the result will be a brain of average ability in a body of average size; but several modes of departure from this norm are possible, and are exemplified in experience.

Supposing the supply of energy to remain about the average, but the brain attracts more than its due share, the result will be exceptional ability in a person of less than average stature; and you will recall how many men of the highest intellectual eminence have been below the average height. I need only instance five of the greatest commanders in history—Cæsar, Marlborough, Nelson, Napoleon, and Wellington.

If, the supply of energy remaining normal, growth in bulk attracts an undue share, the result will be a brain of little power in a huge body; and it is notorious that giants are more often below the average in ability than persons of ordinary stature. They are not necessarily so, however, any more than dwarfs are necessary geniuses, for a clever giant may be produced by the equable distribution of an exceptionally large store of developmental energy, and an idiotic dwarf is quite frequent from what we may suppose is the opposite condition.

There are no known means of adding to the developmental impetus or energy once conception has taken place, but I have no doubt that the amount of this impetus can be materially modified by what takes place before conception, and there is no doubt that the proportions of it that go to increase of bulk and to development of intelligence respectively vary from time to time in the same person.

Precocious Children.

Hitherto I have spoken as if increase in bulk of body and increase in brain development proceeded equally and *pari passu*, but anyone who has watched the growth of children knows that this is rarely or never the case. Precocious children are common enough, and the precocious child is always small for his age; his brain has developed at the expense of his body. For a time the brain develops alone and growth in stature is stationary, and if this period is prolonged the child may become a marvel of precocity. One fond mother confided to me that she should give her child a special education to fit him for the only career that seemed worthy of his marvellous ability—that, namely, of Prime Minister. He was then 6 years old. Now he is the father of a family, and though of fair average business ability, he is not yet Prime Minister, and for my own part I should hesitate to entrust the destinies of the nation to his hands. His history is the history of scores of other precocious children. From five or six to seven or eight they are prodigies of learning and intellectual vigour. They are always top of their class in school, and they bring home prizes in heaps. But after a certain period of uninterrupted success at school and of stationary growth—they are always small for their age—they begin to fall behind. Others, previously their inferiors, catch them up and overtake them. They go down and down in the class lists until their parents' hopes are dashed, and even the medical man may be consulted to know if their brains are not giving way. But it is all right. The medical man, if he knows his business, will decide the matter by the measuring rod and the scales. He will notice that the child has begun to grow. He is shooting up by leaps and bounds. His trousers are too short, and his wrists project from his sleeves. By some means, perhaps by the product of some ductless gland, the developmental energy has been switched off from his brain and switched on to his body. Either there is not enough to serve both at once, or the regulating apparatus acts alternately, now one channel being opened and the other shut, and now the conditions being reversed. After a period in which growth proceeds apace, and intelligence seems actually to diminish, the conditions are either reversed again, or more often a better balance is established, and the two proceed together in harmony; but children who have been violently precocious never, in my experience, completely recover the check to growth in stature that they receive during their precocity.

Practical Conclusions.

From these observations several consequences follow. In the first place, if a child is very precocious it is never safe to predict that it will set the Thames on fire. I say nothing about musical prodigies or calculating prodigies, because music and mathematics, like chess, and linguistics, and certain other faculties, have no relation to general ability. They may be highly developed in the dull, and they may be absent in exceptionally clever men. They go for nothing. In the second place, when a hitherto intelligent child becomes stupid, dull, clumsy, and even when it exhibits mental traits that are distinctly abnormal and alarming, we need not be much concerned if we find that it has started into rapid growth; and if the growth is very rapid almost any mental symptom may be witnessed without alarm. In the third place, we need not fear ill results from stimulating the intelligence of a child, even of a precocious child, provided it is healthy in body, eats well, sleeps well, and is not disturbed by dreams, and provided we do not continue the stimulation into the period when bodily growth has started and the development of mind has no backing. The week that the child starts into growth all stimulation of

the intellect should cease; and when the growth is rapid intellectual exertion should be restricted, and watched with vigilance. Especially if there is in the family any tendency to nervous or mental disorder, children who are growing very rapidly should be withdrawn from school altogether until the period of rapid growth is over. If I had charge of a school I should measure and weigh the children frequently, and should regulate their intellectual exertion according as growth was active or quiescent. I do not think that intellectual work at high pressure is harmful to either boys or girls as long as food, sleep, and bodily exercise are sufficient; but I am quite sure that pressure of intellectual work in those who are growing rapidly should never be permitted; and if growth is proceeding very rapidly, all intellectual work should be put aside. Another thing that requires careful regulation is the diet. It is scarcely possible to give growing children too much to eat, and it should always be borne in mind that the carbohydrates—starch, sugar, and fat—are mainly fuel that is burnt up in producing muscular movement, and that the proteins are the main elements in the formation of tissue. Consequently, it is a mistake to restrict the meat ration of children.

THE CONTINUITY OF THE GERM PLASM.

To go back now to my supposition of the several parts taken by the sperm cell and the germ cell in producing the development of the organism. If my view is correct, that conception is the production of an impetus towards growth and development, then, manifestly, it is desirable that this impetus should be as vigorous as possible; and this maximum of vigour can only be produced by a sperm cell charged to the full with energy uniting with a germ cell that is at any rate not deficient. The commonplace view taken by the commonplace man and shared by all breeders of stock is that the more vigorous the parent the more vigorous will the reproductive cells of that parent be, and that the best offspring are the product of the healthiest parents. Great doubt must be thrown upon this opinion if we are to accept Weismann's hypothesis of the continuity of the germ plasm, and all the implications of that hypothesis that are held by his disciples, whose enthusiasm has carried them, as the enthusiasm of disciples so often does, far beyond the position of their master. It is this habit that reconciles me so completely to the knowledge that I have no disciples. Weismann's hypothesis is that very soon after conception certain cells formed by the division of the zygote are set aside to form the reproductive cells of the new organism, and I do not know that it is anywhere positively and clearly stated—clearness is not such a foible with biologists as positiveness is,—but it is generally assumed that after the reproductive cells are set aside, nothing that happens to the soma, or body cells, has any influence or effect whatever on the reproductive cells. These latter are in the body, but not of it. They lead an independent life, and are exempt from any consequences of anything that may happen to the soma. They live apart like—

> The gods who haunt
> The lucid interspace of world and world
> Where never creeps a cloud or moves a wind,
> Nor ever falls the least white star of snow,
> Nor ever lowest roll of thunder moans,
> Nor sound of human sorrow mounts to mar
> Their sacred everlasting calm!

I do not say that this doctrine is taught exactly in these terms, but one rises from the perusal of the writings of the Weismannites with this impression strongly on one's mind, and I venture to say that whether the continuity of the germ plasm is a correct doctrine or not, this extension of it is without doubt erroneous. Even the most devoted adherent of the continuity of the germ plasm and its sequestration from the soma must admit that when the body dies the reproductive cells that it contains also die; and can scarcely contest that when the body is sick unto death the reproductive cells can scarcely retain the full vigour that they had when the body was in robust health. I am quite willing to grant that they have a certain independence, and do not respond to every trifling and temporary impairment of the bodily health. No doubt they have considerable inertia in this respect, and follow the fluctuations of bodily health sluggishly, and, as it were, unwillingly, but that they do follow the fluctuations when the fluctuations are extreme is shown by the fact that the death of the body is followed at no long interval by the death of the reproductive cells. It is fair to infer that if the reproductive cells follow slowly and sluggishly the deterioration in the health of the body, they will follow with equal deliberation its recovery, and we may fairly suppose that children begotten after prolonged illness even some time after, will be deficient in stamina. I think there is clinical evidence that this is so, and there is another sequence of which I am sure, and that is that children born at the extreme end of childbearing life are frequently less vigorous both in body and mind than their elder brothers and sisters, and are not infrequently dwarfed in body or mind or both. I have seen instances that leave no doubt in my mind that a very late conception may result in imbecility in the offspring, and it is notorious that children born near the climacteric of the mother are often not viable. The late Dr. Langdon Down was of opinion that one cause of idiocy and imbecility is the drunkenness of the father at the time the child was begotten. *A priori* I should think this extremely unlikely, for drunkenness is but a temporary intoxication, and temporary alterations in the soma cannot be expected to influence the reproductive cells. Moreover, when we remember the almost universal drunkenness that prevailed in the time of the Regency in this country, it is difficult to account on this hypothesis for the extraordinary increase in the general level of intelligence that characterised the reign of Queen Victoria.

It may seem scarcely worth while to present a formal argument to show that if we want vigorous children we must provide healthy parents, for this seems sufficiently obvious, and oddly enough is preached as loudly by those who adopt in its extreme form the doctrine of the sequestration of the reproductive cells as by practical breeders of stock; nevertheless, it is always pleasing, if it is not always useful, to point out an inconsistency.

INHERITANCE IN RELATION TO INSANITY.

So much for that part of the subject: and now, leaving heredity, let us inquire what interest inheritance has for the physician, at any rate for the physician who practises in nervous and mental disease. It is a commonplace, both in the world of medicine and in the world outside of medicine, that insanity runs in families; and undoubtedly we often find other instances of insanity in the families of our insane patients; but this is only a small part of a large truth. We must take it in connexion with two other facts that are not less important. It is quite true that in a family that has one insane member we often find other members that are insane; but it is equally true that in these same families we find also other members who do not exhibit a trace of insanity or of any other disorder of the brain; and we find yet other members who are not indeed insane, but who suffer from some disorder of the functions of the brain. In these families we find some members who are hysterical, some who are epileptic, some who have outbreaks of unprovoked temper, others who will sulk for days and weeks, others who carry jealousy to crazy excess, others who cultivate the moral torture of their families into a fine art, others who suffer from agoraphobia or claustrophobia, from obsession or imperative idea, or from paroxysmal drunkenness.

All these disorders are disorders ultimately of the highest functions of the brain. They are disorders of a region of grey matter of very wide extent, of very various function, and of excessively complex organisation. The idiot, the imbecile, and the feeble-minded never attain the necessary complexity of organisation, and remain for life without struggle or protest complacently in the condition of children or even of infants. But there are others who go farther than this. They grow up normally to adolescence, and it is not until adolescence is reached that the heavy burdens of life are assumed and the conscious struggle for life begins. In the nursery and the school the conditions of life are artificially simplified to adapt them to the simple minds of children, youths, and girls; but when the adolescent leaves school he goes, as we call it, "out into the world." He may not be compelled to earn his own livelihood, but he comes into close relation with the infinite complexity of modern civilised society, he is no longer schooled and tutored, but has to make his own decisions about serious affairs under the guidance of his own reason. Just at this time, too, the reproductive activity asserts itself. A great body of emotion is added to the internal turmoil, and the stress is too great for an imperfect organisation. The brain falls into disorder

upon being confronted with problems with which it is unable to cope, just as we may suppose the town council of Birmingham would fall into disorder if it were suddenly called upon to administer the British Empire. There is a struggle, but a futile and ineffectual struggle. There is neither personnel nor moral enough for the task; and after a brief period of active mania the patient settles down into weakmindedness or imbecility, from which he may emerge, after a long rest for recuperation and reconstruction of the brain, or in which he may remain for the rest of his life. This seems to be a premature cessation of development comparable with idiocy and imbecility, but occurring at a later stage; but clinically they differ, for while there is very little evidence that idiocy, imbecility, and weakmindedness are heritable, in the sense that they are passed on from parent to child, cases of adolescent insanity do usually occur in families in which there are other insane members.

Inheritance of Nervous Instability.

For my own part, I do not believe that insanity is ever inherited. What is inherited when nervous disorder of this and other kinds appears in successive generations, is a certain instability or vulnerability of the nervous structure in the highest regions of the brain, such that they readily become disorganised when exceptional demands are made upon them, or even when demands are made upon them that are not exceptional. The nerve tissue in these parts of the brain is of extreme complexity, the area over which it is spread is large, and its functions are various. The chief thing they have in common is that one and all are substrata of mind—that is to say, that during the activity of any part some form or phase or faculty of mind is active. Owing to their large area, it may easily happen that one part is disordered in its working while other parts remain normal and carry out their functions faithfully, and according as one part or another is disordered, according as the disorder spreads in area or in depth, according as the spread is rapid or slow, so do the symptoms vary. These are all accidents of stress or of circumstances, and vary in different persons; and consequently the manifestations of mental disorder are various in the extreme. The central fact is the instability and inefficiency of the highest arrangements of the brain, and according as this insufficiently organised structure gives way here or there, to this extent or that, deliberately or rapidly, the result is manifested in this form of madness or in that, in epilepsy, in ungovernable passion, in hysteria, in paroxysmal drunkenness, in obsession, in imperative idea, in agoraphobia or claustrophobia, or in some other mental malady. I do not think that any one of these is heritable *per se*, but every one of them is an indication of that instability of the highest nervous arrangements which is heritable, though it is by no means necessarily inherited. That is the position. The children of those who suffer from any one of these disorders are liable to suffer either from that or from some other manifestation of the instability. They will not necessarily suffer, but they will be liable to suffer; and if there are several children they may perhaps all of them suffer, and it is very unlikely that they will all escape, but they will suffer in different degrees and from different manifestations. I do not know that any one manifestation of the diathesis is more indicative of heritability than any other, but if there is one such it is undoubtedly epilepsy. The epileptic parent not only is very apt to transmit the general diathesis of instability, but he is, I think, peculiarly apt to transmit his own particular form of it.

Scope of Legislation Restricting Marriage.

No doubt under any rigorous system of eugenics, persons who exhibit this diathesis by any of its signs would be prohibited from marriage; and although I am no advocate of the legislative restriction of marriage, I must say that I should oppose but half-heartedly a law to prevent the marriage of epileptics; but farther than this, as at present advised, I should not go. In some cases these persons inflict upon their off-spring, who are apt to be numerous, a very heritage of woe; but it must never be forgotten that it is to these very families that many men of very exceptional ability owe their origin. I have given what I think is the reason for this in another place, and need not pursue it here, but I believe there is good reason to think that Dryden was expressing a fact of inheritance when he said—

> Great wits to madness sure are near allied,
> And thin partitions do their bounds divide.

ABSTRACT OF

The Bradshaw Lecture

ON

HYSTERIA IN SOME OF ITS PROSPECTS.

Delivered at the Royal College of Physicians of London on Nov. 4th, 1913,

BY T. R. GLYNN, M.D. LOND., F.R.C.P. LOND.,
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IN discussing the hypotheses advanced to explain the nature of hysteria, Professor Glynn was of opinion that the ingenious theory of Breuer and Freud of the effect of latent mental trauma on the mind claimed respectful attention, but their contention that this subconscious shock is always of a sexual character was repellent and cannot be accepted without further investigation. Janet's theory of a restricted field of consciousness explained a number of hysterical symptoms, but failed to account for others which were physical—such as of disturbance in the circulation, and the nutritional and trophic disorders that were occasionally met with in the disease. He referred to the case of a girl with hysterical paralysis who suddenly and painlessly lost all her nails, to another girl who in a similar condition in one night lost most of her hair, to two cases of erythematous eruption, to cases of hysterical œdema and muscular atrophy.

He alluded to Charcot's stigmata and to the precautions to be exercised in examining patients suspected of being hysterical. He had found tremor of the closed eyelids in 80 per cent. of these subjects. Dyschromatopsia, as well as restriction of the visual fields, was exceedingly common, but the field for red was not invariably the most extensive; monocular diplopia and macropsia were pretty frequently met with. In a few instances the common sensibility of the lining membrane of the nose was impaired, as strong ammonia held under the nose caused no discomfort.

In men, said the lecturer, the fragmentary hysterical paroxysms—transient giddiness, dimness of sight, and confusion—were as valuable as indications of hysteria as were the more pronounced fits in women; he had found a history of such attacks in four-fifths of men suffering from traumatic hysteria. The plantar reflexes were not only absent in hysterical paraplegias, but very frequently in other cases of this disease. In examining the subjects of the so-called "nervous shock," with symptoms so often of an entirely subjective nature, the greatest assistance was afforded by conducting the investigation according to Charcot's method. In this way hysterical and neurasthenic cases were readily differentiated. Out of 160 cases of nervous shock, 112 were suffering from hysteria or hysteria combined with neurasthenia, and 48 from simple neurasthenia.

The presence of Charcot's stigmata pointed to the existence of a hysterical condition, but did not indicate that the actual symptoms were necessarily dependent on the disorder. In certain subjects any affection may give rise to, and be attended with, hysteria, and some affections, organic and functional, show a particular proneness to occur in association with the disease, by reason of some predisposition common to both—age, sex, and constitution. In many instances the presence of the functional disorder may not add to any difficulty of diagnosis, but in its recognition an explanation may be found of certain symptoms, obscure pains and sleeplessness, and the diagnosis be rendered more complete. In other cases the presence of a complicating hysteria may lead to error. Illustrations were given of mistakes in diagnosis arising under these circumstances.

The lecturer then considered hysteria as he had met with it in association with epilepsy, chorea, chlorosis, Graves's disease, stomach disorders, diseases of the heart and nervous system. He had found the stigmata of hysteria present in

about 20 per cent. of epileptics, and in the majority of these there were more salient symptoms of the disorder. In four instances the epileptic attack towards its termination presented all the features of an hysterical crisis. In eight cases the epileptic and hysterical fits in the same individual occurred independently. In the majority of the other cases—12—besides the stigmata pointing to hysteria were such symptoms as neuralgic pains, headaches not connected with fits, palpitation, sleeplessness, vivid dreams, tremor, and pain over the heart.

Certain of the hysterical stigmata were found in 25 out of 96 cases of Sydenham's chorea, and in many some more pronounced features of the disease were also present. Together with the incoördinate movements of chorea, there were such manifestations as rhythmical spasm of an arm, rhythmical twitching of the eyelids, regular clonic movements of the legs, and rigidity of the legs. In one case hysterical rhythmical spasm followed chorea after an interval of two days, and in another in the course of two months. In two other instances the chorea was not of the ordinary type, and seemed to be a hysterical or subconscious renewal of former attacks of genuine chorea. In the remainder of the 25 cases there were such symptoms as neuralgic pains and tender spots in 10, vomiting without apparent cause in 2, aphonia in 2, semi-hysterical attacks in 4, typical hysterical cough in 1. To emphasise the distinction between ordinary and the so-called hysterical chorea several tracings were exhibited of rhythmical tremor and spasm.

The infective diseases, continued Professor Glynn, may provoke hysteria, and the affection may complicate their progress as well as follow during convalescence. Cases of rheumatic fever and typhoid associated with hysteria were referred to. Chlorosis for obvious reasons was, he said, very frequently attended with hysteria. Out of 164 cases of chlorosis, 45, or 25 per cent., were hysterical. In 20 out of the 45 there was much headache, as a rule vertical, with restlessness at night and vivid dreaming. Eighteen suffered more or less from obstinate vomiting and gastralgia, 5 had hysterical fits in some form, 8 exhibited fine tremor of the hands, 4 complained of pain and tenderness over some part of the spine, and 3 of great weakness of the legs. Two developed hysterical anorexia.

In Graves's disease the hysterical stigmata were present in 35 per cent.

There was evidence of hysteria in the presence of the stigmata and in a few of other symptoms, in three-fourths of the cases of simple gastralgia in young women. It was not likely that the hysteria was only accidentally associated with the gastralgia, since they were found together in so many instances; moreover, the hyperæsthesias and pains are just as characteristic a feature of hysteria as are the anæsthesias.

He had met with 15 cases of anorexia nervosa, and in each of these certain hysterical stigmata were present. One subject of the disease became comatose and was measured for her coffin, but under vigorous treatment recovered. Two died, one was removed to a nursing home when hopelessly weak and the other recovered for a while but in 12 months relapsed and died. Another case was very exceptional, the subject of the disorder being a boy.

The hysterical stigmata were present in 23 per cent. of the cases of gastric ulcer in young women, that is in patients with a history of hæmatemesis or melæna.

The relation of hysteria to heart disease was of special interest. Such hysterical affections as pseudo-angina, or simple pain over the heart, palpitation, dyspnœa, and syncope, when the heart is normal arouse fears of cardiac disease in the patient, and worry the medical attendant till he lights on the explanation of the symptoms, and when these hysterical accidents occur in cases where there are signs of organic heart disease they are likely to cause the patient's condition to appear more serious than it is. Further, as nervousness, sleeplessness, and pain are usually associated with hysteria the symptoms due to heart disease tend to be aggravated. Several cases were referred to in illustration. One was a girl with mitral stenosis who after a faint lost the power of her left arm; the paralysis proved to be hysterical in nature and not due to cerebral embolism.

In conclusion, Professor Glynn discussed the alliance between hysteria and the functional and organic diseases of the nervous system.

ON THE STATE OF THE BLOOD-VESSELS IN SHOCK.

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IN 1893 I published[1] my belief that in cases of fever, of post-operative intestinal obstruction, and of traumatic shock there is a contraction of the arteries extending from the arterioles to the larger vessels and progressing until the causal conditions are removed or the patient is moribund. That view was opposed to the teaching of the day that the vessels of the splanchnic area become paralysed in the state of shock and it has also been urged from time to time[2] against the theory that the vessels throughout the body become relaxed. This last theory has for the past six or eight years been almost universally accepted, but recently its accuracy has been less assured, and at the Seventeenth International Congress of Medicine, in the debate on the Pathology of Shock,[3] not one speaker suggested that the arteries are relaxed or dilated in that condition.

The time, therefore, seems opportune for a review of the evidence on this subject, and I propose to state again very shortly the chief points in the argument in favour of the contention that the arteries contract as shock develops, and to indicate some of the more recent facts which have been brought forward in relation to this question. I give precedence to the clinical evidence because it constitutes my justification for offering an opinion and because the value of laboratory work to the surgeon must in the long run be judged by its success in explaining clinical conditions.

Clinical Considerations.

When in the course of an operation a patient passes into the state of shock, even if he loses little or no blood directly from divided structures, his tissues become obviously more and more bloodless, and careful observation during operations upon the abdomen shows that the anæmia is as conspicuous in the splanchnic area as in any other. This observation has been confirmed by Dr. G. W. Crile[4] who wrote concerning his laboratory work that both before and after death from shock "the arteries were quite empty, the tissues pale." He also said that when the splanchnic area was not involved in the manipulations of an experiment "autopsies did not reveal a condition of vascular distension in this area different from that of other areas."[5] Unless these observations are altogether mistaken, it is certain that there is no dilatation of the vessels generally or of those in the splanchnic area alone in the state of shock.

During the progress of severe operations it may occasionally be observed that the arteries become imperceptible at the wrist whilst the pulse-rate is not quickened or even is slower, and the beats of the carotid are full and bounding. On one occasion it was noted that at the end of an operation upon a healthy young woman the pulse-rate was 48 to the minute, and no pulsation was perceptible in any vessel of the extremities. The operation, an ovariotomy, was not a severe one, and the usual state of the vessels was restored after a very short time. A similar combination of signs was frequently observed passing gradually back to the normal or developing into the rapid heart action which is characteristic of well-marked cases of shock.

Such conditions could only arise from an increased opposition to the flow of blood through the small vessels and a well-sustained output of blood from the heart. The dissociation for a time of the small, weak, or imperceptible pulse from the hastening of the heart beats which usually accompanies it suggested that the arterial contraction was the more constant change. It did not seem possible that in some cases the arteries could be contracted whilst in others they were relaxed, or that in the particular cases now under discussion the active contraction which certainly

[1] The Physiology of Death from Traumatic Fever, J. and A. Churchill; also THE LANCET, Feb. 25th (p. 408) and March 4th (p. 460), and 11th (p. 519), 1893.
[2] THE LANCET, August 26th (p. 573), 1905; Brit. Med. Jour., Dec. 9th, 1905; Transactions of the Royal Medical and Chirurgical Society, vol. xc., p. 563; Transactions of the Medical Society of London, 1909.
[3] Section III., General Pathology and Pathological Anatomy, August 11th, 1913; THE LANCET, Sept. 16th, 1913, p. 726.
[4] Surgical Shock, 1899, p. 140.
[5] Loc. cit., p. 139.

occurred could become a relaxation without some sign of the gradual or sudden change. If the change was gradual the pulse at the wrist would come back to its ordinary volume if only for a short time, a condition never observed during the development of shock. If contraction of the vessels suddenly became relaxation there would certainly be some acute disturbance which could not be overlooked clinically. As there were no signs of any such changes, there could be no doubt that the contracted vessels did not relax.

All authorities agree that the heart is stimulated to greater effort as shock develops and there seemed to me to be much reason for believing that the slow heart action associated with a small or imperceptible peripheral pulse might be observed more readily, if not only, in cases in which the heart muscle was relatively strong. When these observations were made the work at the Samaritan Free Hospital consisted in great part of the removal of large ovarian tumours, and it seems probable that such cases offered unusual opportunities for the observation of the effects of a comparatively powerful heart. It is well known that cardiac hypertrophy is a physiological effect of gestation, and it is reasonable to suppose that the presence of an ovarian tumour would at least occasionally induce a similar change. This view was supported by the fact that in a few cases an opportunity was obtained of examining the heart at a necropsy when its action had for a time remained slow after the pulse at the wrist became very small or imperceptible, and in these cases the cardiac muscle was always well developed, whilst in one instance there was a very obvious cardiac hypertrophy without any gross cardiac or renal lesion or other discovered cause of this condition except the presence of the tumour. The facts recorded led me to assert in 1893 that "if the heart be sufficiently strong its action remains slow,"[6] but that if still greater contraction of the vessels takes place the heart becomes relatively feeble and its pace quickens.

The extreme pallor in all the tissues, the definite evidence that in some cases the arteries were tensely contracted whilst the heart action was not hastened, the known fact that stimulation of the sensory nerves causes arterial contraction, and many other observations which cannot be set down in a short paper, were considered together to form a proof that "in traumatic fever, in shock and in abdominal distension following a laparotomy, the small feeble pulse, whether slow or fast, is in no sense due to cardiac weakness, is not a condition beginning at the heart, but is an immediate effect of the contraction of the vessels."[7]

If these contentions were true it was certain that the total volume of blood in the arteries must diminish, and in the absence of any marked venous distension it was argued that the fluid parts of the blood must escape from the vessels into the tissues. In cases of intestinal obstruction after abdominal operations, in which also it was held that the vascular capacity steadily diminished, there was no doubt that a great loss of fluid from the body did occur, because this condition is characterised by an extreme degree of exudation of fluid into the intestine and out of the body by vomiting. Moreover, in this condition the vomited fluid is at first clear, and gradually becomes yellow, green, brown, and nearly black. These changes indicate that not only fluid escapes from the vessels but that there is also an excessive and increasing destruction of blood cells in the liver. In the state of shock there is little time for such obvious indications of blood destruction to show themselves, and it does not follow that an excessive secretion of bile of short duration will be ejected from the stomach through the œsophagus, but sometimes recovery from shock is accompanied by vomiting of bilious or even black fluid, and the amount of fluid lost from the skin is always great when the condition is well marked.

The loss of fluid and other constituents of the blood from the vessels was regarded as the cause of the extreme anæmia of the whole body, and death was attributed to a starvation of the various tissues and organs which might be traced in the evidences of the failure of their functions. When the vaso-motor centres were affected the whole body died.

Experimental Considerations.

A short *résumé* of the experimental evidence shows that it is conclusive in support of the clinical. The theory that in shock the animal bleeds into its own splanchnic veins has now no supporters. Dr. G. W. Crile's first book advocating the view that shock is characterised by a general vascular relaxation was published in 1899,[8] and in that year also Romberg and Pässler[9] advanced the same view on very much the same grounds with regard to the conditions found in toxæmic fevers. In regard to both shock and toxæmic fevers it was argued that death was not due to cardiac failure, as was then generally believed, but that there arose a loss of tone in the vaso-motor system followed by a failure of the circulation when the vessels relaxed. This view had a great vogue as regards shock until quite recently. Romberg and Pässler's communication did not apparently attract so much attention.

The argument depended entirely upon the interpretation of the fall of blood pressure. It has long been known that a stimulation of sensory nerves excites reflexly a general arterial contraction and a consequent rise of blood pressure in the large arteries. Conversely a relaxation of the vessels lowers blood pressure in the large arteries. It was shown in 1899 that if the stimulations of tissue were sufficiently severe or if fever was sufficiently continuous the blood pressure after a rise fell very low, and this was regarded as a proof that arterial relaxation had occurred. It was argued that the fall of the pressure became so great that when the state of shock was fully established the vessels were completely relaxed, and this condition was attributed to a paralysis of the vaso-motor centres from over-stimulation and consequent exhaustion of their energy. But this argument omitted altogether the possibility that the volume of blood in the vascular system might diminish and the obvious fact that the tissues became anæmic both in shock and in fever. As Yandell Henderson has pointed out, the conclusion that the vessels relaxed was arrived at because the authors of this view "applied to their problem that conception of the circulation which the physiology of to-day teaches. This was their sole mistake."[10] Many new facts were demonstrated by detailed records of most interesting experimental work, and none of these facts have been contradicted in any material respect, but the evidence is now very strong that the interpretation was at fault. As early as 1903 physiologists began to question the evidence that the vaso-motor centres become paralysed. In that year Professor W. T. Porter and Dr. W. C. Quinby, of the Harvard Medical School, published experiments showing that in the state of shock the vessels were still influenced reflexly by nerve stimulations, and they concluded that "exhaustion of the vaso-constrictor nerves cannot therefore be the essential cause of the symptoms termed 'shock.'"[11]

In 1907 Professor Porter recorded another "investigation into the effect of uniform stimulations of the depressor brachial and sciatic nerves at various levels of blood pressure from the normal down to about 9 mm."[12] of mercury. He showed that "the absolute change in blood pressure upon stimulating these afferent nerves remains almost unchanged until the blood pressure has fallen to about one-third its usual height,"[13] and that "the reflex fails only when the blood pressure sinks to a level at which anæmia of the vaso-motor centres is certain. Indeed, all we know regarding these and similar cells strengthens the belief that their endurance under stimulation is very great. On the other hand, they are extraordinarily sensitive to changes in the blood-supply." It was added that "the data presented are wholly opposed to the hypothesis that would explain surgical shock by the exhaustion of the vaso-motor centres."[14]

The question of the state of the vessels in shock was also studied by Dr. M. G. Seelig and Professor E. P. Lyon, of Saint Louis, Mo., U.S.A.,[15] who performed an ingenious experiment upon a series of dogs showing that division of the sciatic nerve made a greater proportional increase of the blood flow from the previously divided femoral vein in a shocked animal than the increase observed in the other leg of the same animal before the state of shock was brought about. The deduction was drawn that "this proportional difference must

[6] The Physiology of Death from Traumatic Fever, p. 67. Physiological teaching was quoted in support of this view.
[7] Loc. cit., p. 66.
[8] Surgical Shock, Boston, 1899.
[9] Deutsches Archiv für Clinische Medicin, 1899, vol. lxiv., p. 652.
[10] American Journal of Physiology, vol. xxvii., p. 154.
[11] Boston Medical Journal, 1903, pp. 455–56; American Journal of Physiology, 1903–1904, xii., xiii.
[12] American Journal of Physiology, 1907, xx., p. 399.
[13] Loc. cit., p. 404–05.
[14] Loc. cit., p. 405.
[15] Journal of American Medical Association, Jan. 2nd, 1909, vol. liii., pp. 45–48.

be referred to the fact that in the shocked animal, before division of the sciatic the vessels are in a state of greater contraction than they are in the normal animal." The authors of these observations invited Dr. John Green, jun., to examine the eyes of dogs before and after the induction of shock, and to note carefully the size of the vessels of the fundus without telling him what was or was not expected. "In every instance he reported that the vessels showed a marked degree of contraction after the animal was in shock." Sometimes the vessels resembled mere threads, and in one case the contraction was observed immediately before the animal died.

Dr. Eugene Boise holds that the chief cause of the fall of blood pressure in shock is an abnormal increase in cardiac contraction and a decrease of cardiac relaxation by which the capacity of the heart becomes so reduced that it cannot adequately fulfil its propelling functions. From an analysis of Crile's records and from his own investigations Boise argued that in shock "there is an excessive irritation of both the vascular and cardiac centres whereby the arteries and heart are both almost spasmodically contracted."[16]

Professor Yandell Henderson, of Yale University, U.S.A., has formulated a very large conception regarding the effects of diminution of the quantity of CO_2 in the tissues. His views are in many respects altogether original, and they seem to me to throw a flood of light upon conditions about which we have hitherto been quite in the dark. Haldane and Priestley had confirmed[17] the observation of Miescher that variations in the amount of CO_2 in the body are very important and had shown that very slight differences of the pressure of this gas in the pulmonary alveoli (normally about 5·5 per cent. of an atmosphere) lead to an immediate hastening or slowing of the respiration until the normal tension is readjusted.

Mosso had demonstrated[18] that under reduced atmospheric pressure the CO_2 content of the blood is diminished and that this diminution is one of the causes of the disturbance of function in mountain sickness. He suggested the term acapnia (*a*, privative, and *καπνός*, smoke) for this diminished pressure of CO_2.

Following up these indications Henderson worked out his scheme and he has summarised his views thus.[19]

> From the data to be presented in this series[20] of papers it appears that the CO_2 content of the blood exercises regulating influences upon the heart rate, upon vascular tonus, upon the peristalsis of the alimentary canal, upon the mental condition and upon a number of other functions of the body to a degree so far as we can find from the literature, hitherto in great part not demonstrated. These data show that even a slight reduction in the CO_2 content of the arterial blood causes a marked quickening of the heart rate. Further reduction induces an extreme tachycardia, complete cessation of peristalsis, failure of many reflexes and coma. If an extreme reduction of the CO_2 content of the blood is effected very rapidly the heart comes into a state bordering on tetanus. This cardiac tetanus practically abolishes the pumping action of the heart, arterial pressure falls therefore, and death results.
>
> If the reduction in the arterial CO_2 is less extreme, but is maintained for a considerable time (an hour or more according to the extent of the reduction), so that the tension of CO_2 in the venous blood and in the tissues is greatly reduced, symptoms and conditions result which are similar in many respects to those occurring in mountain sickness and apparently identical with those of shock.

Henderson says that "acute acapnia diminishes the volume of the blood as effectively as does an extensive hæmorrhage,"[21] and that "arterial pressure ultimately sinks in spite of an intense activity (not because of failure) in the vaso-motor nervous system, and in spite of an extreme constriction (not because of relaxation) of the arterioles."[22]

The influence of a subnormal amount of CO_2 in the tissues has been investigated also by Dr. E. Jerusalem and Professor E. H. Starling of University College, London, who state that their experiments[23] confirm Yandell Henderson "in his description of the action of the heart when the CO_2 of the blood is reduced to very low limits."

Thus from many independent sources there is an overwhelming mass of experimental evidence, and much more could be quoted, to the effect that the heart and the vessels are both stimulated to increased activity as the state of traumatic shock develops.

But Yandell Henderson's scheme involves a much wider area than the vascular changes in shock. He says that acapnia has been found "in many forms of fever, in diabetic coma, in the conditions consequent on violent muscular exercise, and in that form of shock which results from the intravenous injection of albumose and 'peptone.' In all of these conditions, as well as in mountain sickness, excessive artificial respiration, and surgical shock, there occur at one stage or another, and in varying order, hyperpnœa followed by shallow respiration or apnœa, tachycardia, venous congestion, and fall of arterial pressure, muscular weakness, suppression of reflexes, disturbances of consciousness and disturbances of the motor functions of the alimentary canal."[24]

It is impossible in a short paper to attempt to give any adequate account of Yandell Henderson's teaching, but it seems to be in complete accord with my contention mentioned at the beginning of this paper, that in cases of fever, of post-operative intestinal obstruction, and of traumatic shock there is a persistent and increasing contraction of the arteries, a conclusion which I believe to be demonstrable at the bedside.

These very short remarks indicate with as little detail as possible the views of the state of the vessels in shock which seem to me to be supported by the clinical and experimental facts set forth. The matter is obviously of great importance, for if it is a mistake to believe that the vessels relax as a consequence of severe or continuous injuries it is hardly likely that much real progress can be made in the study of operative conditions until that mistake is rectified. The opposite view that the vessels contract offers a much more certain guide both for understanding and treating the conditions found. And as regards the detail that in fevers and in shock the same vascular changes take place, I am convinced that this fact, as I believe it to be, gives an immense advantage in understanding clinical phenomena to those who accept it.

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[16] The Nature of Shock. American Journal of Obstetrics, vol. lv., No. 1.

[17] The Journal of Physiology, 1905, vol. xxxii., p. 225.

[18] Mosso and Marro: Archives Italiennes de Biologie, 1903, vol. xxxix., pp. 387, 395, and 402; also 1904, vol. xli., p. 357, quoted by Yandell Henderson. American Journal of Physiology, 1908, vol. xxi., p. 136.

[19] American Journal of Physiology, 1908, vol. xxi., p. 128.

[20] Acapnia and Shock, loc. cit., 1908–1910, vols. xxi.–xxvii.

[21] American Journal of Physiology, vol. xxvii., p. 161.

[22] Loc. cit., p. 158.

[23] Journal of Physiology, 1910, vol. xl., p. 284.

[24] American Journal of Physiology, vol. xxi., p. 141.

FOURTH REPORT ON TYPHOID CARRIERS.

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PROFESSOR OF PATHOLOGY, BRISTOL UNIVERSITY, AND PATHOLOGIST TO THE BRISTOL ROYAL INFIRMARY.

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IN the last report[1] it was concluded that the results then obtained justified a prolonged study of the case in hand. The present note deals with the further course of the condition.

The methods employed are the same as were detailed in former communications. For reasons previously stated the examinations have been limited to the search for typhoid bacilli in the excreta, the determination of the agglutinin contents of the serum, and the action of therapeutic agents.

The carrier was a female, aged 33, who had enteric fever in July, 1905. Since that date eight cases of infection had been traced to her. She came under observation in January, 1909, and proved to be a urinary carrier. For a period of three months urotropine was given continuously. The excretion of typhoid organisms in the urine was decreased but not inhibited entirely. On April 21st, 1909, a bacillary emulsion prepared from the patient's own organism was given. The doses were continued until 1000 millions were reached. The injections were discontinued on Sept. 29th.

[1] THE LANCET, Sept. 3rd, 1910. See also Journal of Pathology and Bacteriology, 1910, vol. xv., p. 120; THE LANCET, 1908, vol. ii., p. 1585; and Proceedings of the Royal Society of Medicine, 1908, Epidemiological Section, p. 175.

1909. From October, 1909, to January, 1910, typhoid bacilli were not excreted in the urine. On Jan. 4th they reappeared and persisted until Feb. 27th. During this period the agglutination reactions varied from 1 : 1000 to 1 : 1800. Potassium citrate was given for three weeks. There was a cessation of the bacillary excretion until the following July.

Fourth Report.

The observations now recorded show that the urine of this patient has remained free from typhoid bacilli for two years. We feel justified in recommending the discharge of the patient from hospital, subject to her promise to report herself should any of her former symptoms reappear, or for additional treatment if current experimental investigations upon the adjuvant action of drugs or metals upon typhoid bacilli prove worthy of trial in similar conditions.

On Nov. 1st, 1910, the patient was removed from the Ham Green fever hospital to the Bristol Royal Infirmary and placed under the care of Dr. J. A. Nixon. Her temperature was normal and her general systemic condition good. On the 7th a cystoscopic examination was made by Mr. C. F. Walters. He states:—

The bladder was found to be normal except at the right ureteric orifice, the lips of which were markedly œdematous and superficially ulcerated. Above the right ureter there was an area of trabeculation. Catheterisation of the right ureter was difficult owing to the œdema. The catheter could be introduced about 1½ inches only: here there was an impassable obstruction.

The urine obtained from the right ureter contained much pus and yielded a pure growth of typhoid bacilli. The left ureter was catheterised with ease, and the urine was free from pus and typhoid bacilli. A skiagram was taken; it showed a shadow in the region of the right kidney. On the 21st Mr. Walters explored the right kidney. To the naked eye it did not show any abscesses, cysts, or contractions. When bisected longitudinally during a search for foci of suppuration ten small calculi were found lying in one mass near the pelvis. The calculi were removed, the cavity was scraped, and the kidney sutured and returned into the body. The renal cavity yielded a pure growth of typhoid bacilli. Typhoid bacilli were isolated from the calculi also. The calculi were composed of phosphates and organic material only. At noon on the next day the temperature commenced to rise, reached its highest point (104·2° F.) on the 24th, and then fell gradually, reaching the normal on Dec. 1st. A slight effusion appeared at the right base. Recovery was uneventful. During this period the agglutinins reached and remained at 1:1500. On the day following the operation bacillus typhosus was grown from 5 c.c. of blood obtained in the usual way. Pus and typhoid bacilli were found in the urine during the first four days after the operation, the agglutination reaction being positive, 1 : 1000. During the following fortnight the typhoid organisms disappeared from the urine, and the agglutination fell to 1 : 250. Pus and bacilli then reappeared and persisted for the next eight months.

Comparing the clinical features of the case at the time with those of Rousing,[2] Greaves[3] and Adrian, and Meyer and Ahreimer,[4] the condition was less advanced, as there was not any definite pyonephrosis, nor were there any signs of a marked renal involvement, such as acute localised pain or difficulties with micturition. At the operation the renal pelvis did not appear to be affected. However, the changes in the right ureter were of long standing, so that the pelvic mucosa most probably shared in the ureteral focus. The bladder remained free from superficial changes.

The rise of temperature subsequent to the operation and the concomitant appearance of typhoid bacilli in the blood stream, as well as in the later increase in the agglutinin content, suggest that a mild septicæmic condition was brought about by the disturbance of the focus. The chart on next page indicates that the organisms were rapidly overcome. We have not obtained any evidence as to the occurrence of any other focal lesion following this invasion. Had the immunity been low or the organisms of exalted virulence such a result might have been produced.

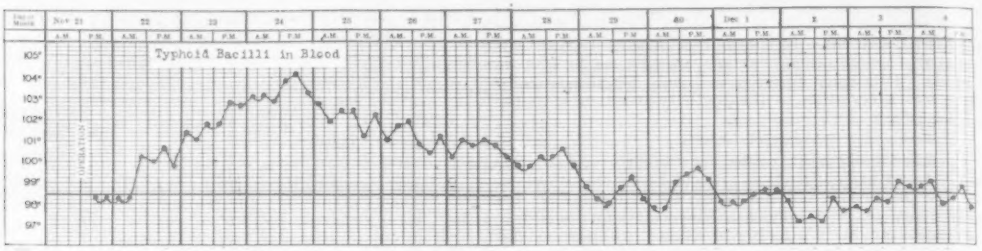
Course of Borovertin.—Onwards from the operation the typhoid organisms and pus were present in the urine. On

TABLE I.—*Showing the Results of the Examinations of Blood and Urine subsequent to the Last Report.**

Date.	Urine. Pus.	Urine. Typhoid bacilli.	Blood, Widal.
1910.			
April 10 ...	—	—	1/1860
,, 11 ...	—	—	1/1860
,, 12 ...	—	—	1/1860
,, 13 ...	—	—	1/1860
May 4 ...	—	—	1/1860
,, 5 ...	—	—	1/1860
,, 6 ...	—	—	1/1860
,, 8 ...	—	—	1/1860
June 6 ...	—	—	
,, 7 ...	—	—	
July 10 ...	+	+	
,, 11 ...	—	+	
,, 12 ...	+	+	
,, 13 ...	+	+	
August 5 ...	+	+	
,, 6 ...	—	+	
Sept. 15 ...	—	+	
,, 16 ...	—	—	
Oct. 7 ...	—	+	
,, 9 ...	+	—	
,, 21 ...	+	+	
Nov. 7 ...	+	+	
,, 9 ...	+	+	1/1000
,, 21 ...	+	+	
,, 23 ...	+	+	
,, 24 ...	+	+	1/1000
,, 25 ...	+	+	
,, 28 ...	—	—	1/1500
,, 29 ...	+	—	
,, 30 ...	+	—	
Dec. 1 ...	—	—	1/100
,, 2 ...	—	—	1/250
,, 7 ...	—	—	1/250
,, 14 ...	—	—	1/250
,, 16 ...	+	+	1/2000
,, 18 ...	+	+	
1911.			
Jan. 4 ...	+	—	1/500
,, 5 ...	+	—	1/250
,, 6 ...	+	—	1/250
,, 23 ...	+	—	
,, 24 ...	+	—	
,, 25 ...	+	+	1/250
Feb. 7 ...	+	+	1/250
,, 8 ...	—	—	
,, 9 ...	+	+	
,, 12 ...	+	+	1/250
,, 13 ...	+	+	
,, 14 ...	—	+	
March 2 ...	+	+	
,, 3 ...	+	—	
,, 4 ...	+	+	1/250
,, 25 ...	+	+	1/250
,, 26 ...	+	—	
,, 27 ...	+	—	
April 12 ...	+	—	
,, 13 ...	—	—	1/200
,, 14 ...	—	—	1/200
May 1 ...	+	—	1/250
,, 2 ...	+	—	
,, 3 ...	+	—	
June 11 ...	+	+	
,, 12 ...	+	+	1/250
,, 13 ...	+	+	
July 1 ...	+	+	
,, 2 ...	+	+	
,, 3 ...	+	+	
August 17 ...	+	—	1/250
,, 18 ...	+	+	1/250
,, 19 ...	+	—	1/250
Oct. 2 ...	—	—	
,, 3 ...	—	—	
,, 4 ...	—	—	
,, 5 ...	+	—	1/1800
,, 6 ...	—	—	
,, 25 ...	—	—	1/2000
,, 26 ...	—	—	1/1500
Nov. 2 ...	—	—	
,, 3 ...	—	—	
,, 19 ...	—	—	1/2500
Dec. 15 ...	—	—	1/1000
,, 18 ...	—	—	
1912.			
Jan. 2 ...	—	—	1/2500
,, 3 ...	—	—	
,, 4 ...	—	—	
,, 13 ...	—	—	
,, 17 ...	—	—	
,, 18 ...	—	—	1/2500
Feb. 13 ...	—	—	
March 7 ...	—	—	
,, 8 ...	—	—	
April 2 ...	—	—	1/2500
,, 30 ...	—	—	1/500
May 6 ...	—	—	1/500
,, 14 ...	—	—	1/1000
,, 15 ...	—	—	
,, 22 ...	—	—	1/500
,, 29 ...	—	—	1/500
June 7 ...	—	—	1/500
,, 11 ...	—	—	1/500
,, 16 ...	—	—	
,, 17 ...	—	—	
,, 25 ...	—	—	
July 2 ...	—	—	
,, 11 ...	—	—	1/500
,, 24 ...	—	—	1/500
,, 26 ...	—	—	
August 14 ...	—	—	1/500
,, 28 ...	—	—	1/500
Sept. 2 ...	—	—	1/250
,, 12 ...	—	—	
,, 18 ...	—	—	1/125
,, 25 ...	—	—	1/125
Oct. 1 ...	—	—	1/250
,, 8 ...	—	—	1/500
,, 15 ...	—	—	1/500
,, 26 ...	—	—	
,, 28 ...	—	—	
,, 29 ...	—	—	
,, 31 ...	—	—	
Nov. 1 ...	+	—	
,, 2 ...	—	—	
,, 4 ...	—	—	
,, 5 ...	—	—	
,, 6 ...	—	—	1/250
,, 7 ...	+	—	
,, 8 ...	—	—	
,, 11 ...	+	—	
,, 12 ...	+	—	1/500
,, 22 ...	+	—	1/250
,, 26 ...	+	—	1/500
Dec. 10 ...	—	—	1/250
,, 19 ...	—	—	1/250
,, 31 ...	—	—	1/250
1913.			
Jan. 10 ...	—	—	1/250
,, 15 ...	—	—	1/250
,, 28 ...	—	—	1/500
Feb. 12 ...	—	—	
April 2 ...	—	—	1/250
,, 7 ...	—	—	1/250
,, 17 ...	—	—	1/125
,, 22 ...	—	—	
,, 30 ...	—	—	1/250
May 14 ...	—	—	1/150
June 11 ...	—	—	1/125
,, 19 ...	—	—	1/125
,, 26 ...	—	—	1/125
July 5 ...	—	—	1/150
,, 23 ...	—	—	1/150

[2] Rousing: Infektiose Krankheiten der Harnorgane, Berlin, 1908.
[3] Greaves: Brit. Med. Jour., 1902, vol. ii., p. 75.
[4] Meyer and Ahreimer: Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, Band xix., p. 486.

* G. S. W. is responsible for October, 1910, the whole of 1911, and for Jan. 2, 3, 4, 17, 18, March 7, 8, June 16, 17, 1912. I. W. H. is responsible for the remainder and for the blood determinations. B. A. I. P. made all the clinical observations while the patient was at Ham Green fever hospital.



Temperature chart for the days following operation.

March 4th, 1911, therefore, it was decided to give the patient one drachm of borovertin daily. This was continued until May 24th, when it was stopped, because the patient complained of being "run down." During this period of administration of the borovertin she lost 7 lb. in weight. When the drug was discontinued recovery to her usual condition was rapid. On July 31st she had regained her average weight. Borovertin was then recommenced and given in the same doses until Sept. 2nd. The weight again fell 5 lb. During these courses of borovertin the excretion of bacilli was unaltered. On reference to Table I. it will be seen that pus and bacilli were present in the urine throughout.

Course of specially prepared Bacterial Emulsion.—On July 1st, 1911, the blood yielded a typhoid organism which was agglutinated by the patient's own blood in 1:500, and after three weeks' cultivation 1 : 800. Cultures of this organism and of a subculture from the urine were repeatedly subcultured for three weeks on (1) serum agar, (2) blood agar prepared with the patient's own blood, and (3) carbolic acid agar (1:10,000 gradually increasing to 1:500). At the end of the three weeks a bacterial emulsion was prepared from a mixture of the growths on the several media and injected.

Table I. shows that the urine ceased to contain pus and typhoid bacilli during October, 1911, while the agglutinating power of the blood rose to 1/2500. The systematic examinations carried out since then until July 23rd, 1913, have failed

TABLE II.—*Injections of Bacterial Emulsion.*

Date.	—	Remarks.
1911.		
Sept. 2nd.	25,000,000	—
,, 3rd.	50,000,000	—
,, 4th.	100,000,000	—
,, 5th.	400,000,000	—
,, 6th.	800,000,000	Giddiness and malaise were complained of. There was also slight pyrexia.
,, 23rd.	1,600,000,000	—
,, 27th.	3,200,000,000	—
Oct. 1st.	6,400,000,000	Giddiness and sickness. Pyrexia. Compelled to remain in bed for three days.

to reveal any further excretions of the organisms, while the agglutination titre has fallen to 1/150.

Blood cultures.—The blood has been examined during the periods of bacillary excretion. On four occasions it has been found sterile; twice it has yielded a strain of bacillus typhosus which was agglutinated 1 : 500 by the patient's own serum, the agglutination reaching 1 : 800 after repeated subcultures during three weeks.

Inhibitory power of urine.[5]—Table III. shows the inhibiting power of the patient's urine upon various micro-organisms. The effect was not obtained when the urine was boiled before being added to the emulsions. Exposure of the urine to strong sunlight did not alter the inhibitory power. Normal and carrier urines were filtered through a Chamberland candle. 0·1 c.c. of urine and 0·1 c.c. of an emulsion containing 10 millions of B. coli, B. typhosus (the various strains being denoted by the letters A, B, C) or staphylococci, were incubated for 1-2 hours, and then shaken and sown upon lactose litmus agar plates. After 48 hours at 37°C. the resultant colonies were counted.

TABLE III.—*Showing the Inhibitory Power of the Urine upon Various Micro-Organisms.*

Date.	Urine quantity.	Normal urine, number of colonies per plate.	Carrier's urine, number of colonies per plate.	Bacterial strains.
1911.				
May 2nd.	0·1 c.c.	64	3	B. coli A.
		34	0	B. coli B.
		111	13	B. coli C.
		34	41	Staphylococci.
		108	0	B. typhosus A.
		77	15	B. typhosus B.
		210	34	B. typhosus C.
August 17th.	0·1 c.c.	100	6	B. coli.
		32	0	B. typhosus.
		19	33	Staphylococci.

On the above dates typhoid bacilli were not found in the urine. The carrier urine did not inhibit the growth of staphylococci, but exerted a marked effect upon the typhoid-coli group.

The evidence of tissue reaction.—The agglutinin content of the blood has been determined at intervals and in periods of about four days each. The method followed was that adopted with the object of obtaining comparative results. Table I. shows the high content at the time of the operation and the slow but gradual fall since the cessation of the special vaccine injections. There is still, however, a considerable agglutinative power. Whether this is due to a "habit," or arises from the stimulation of some latent focus, time alone can tell.

Condition of the bladder and ureter in September, 1913.—On Sept. 23rd a further cystoscopic examination was made by Mr. Walters. "The bladder," he says, "was found to be normal in appearance, no trabeculation was visible, and all signs of inflammation had disappeared from the right ureteric orifice."

This patient has now been under our continuous observation for four and a half years. Like other carriers of the urinary type, she has exhibited "intermittent" periods. These have varied from a few days to a few weeks. One of them, however, extended to eight months (April, 1909, to January, 1910). Since August, 1911, we have not been able to demonstrate the presence of typhoid organisms in the urine. The routine practice during this time has been to centrifugalise 15 c.c. of urine and to use the whole of the deposit for enrichment methods prior to plating out. The quantity has been increased to 100-200 c.c. whenever the microscopical appearances of the deposit were at all suspicious. Throughout the whole course of the case bacillus coli has been present occasionally. Sometimes these organisms were associated with a small amount of pus: more frequently there

[5] These experiments were carried out by G. S. W.

[6] THE LANCET, Sept. 3rd, 1910, p. 723.

was not any evidence of reaction. For six months the latter condition has prevailed.

It is perhaps well to state clearly that we do not claim that the typhoid latency has entirely disappeared. The agglutination reactions, in the light of earlier appearances, do not permit of such a contention. Still, the comparatively sudden cessation of the bacillary excretion, the concomitant rise in the tissue reaction, and the subsequent freedom from symptoms, &c., lead us to hope that such a result may be possible. We intend to continue to make periodical examinations of the urine and to apply further medication when called for.

The observations now recorded have been made possible by the action of the Public Health Committee of the Bristol Corporation in allowing the carrier to remain at the Ham Green fever hospital and by several grants towards the expenses of the laboratory investigations from the Bristol University Colston Society's Research Fund. The patient herself has displayed a willing and intelligent coöperation throughout.

DISEASES DUE TO DEFICIENCIES IN DIET.[1]

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THE whole trend of modern pathology has made our minds ill prepared to believe in an extraneous deficiency as the prime cause of a specific disease. We recognise perforce inherent deficiencies in the body of structure or material; but even these, when they are not anatomical and obvious, we tend to look upon as for the most part only predisposing or contributory; the essential and immediate cause of any disease we rather seek in the intrusion of some positive factor, some *res noxia*, be it parasite or poison. So completely is this course justified in general that there is doubtless an excuse for the present tendency to seek for such an intruder in cases where there would seem to be little reason to expect its presence, as in certain diseases of nutrition.

When disease is ascribed to diet the implication is nearly always that the food is infected or poisonous, or at any rate that some constituent is in such excess as to be deleterious. Some malific factor of a positive sort is usually thought to be essential. Even the pioneer in the work upon beri-beri, although his labours had given him the essential facts, did not escape the effect of what seems a bias. Eykman proved that the symptoms of beri-beri followed upon the eating of polished rice and showed that the addition of the missing pericarp was curative; but he was constrained to hold, not the simple, and apparently obvious, view that the pericarp contained something necessary for normal metabolism, but that toxins developed in the endosperm, while a constituent of the pericarp was able to neutralise them.

It is rather remarkable that neither physiologist nor pathologist rendered ready belief to the suggestion that among the dietetic needs of the animal might be organic substances small in amount and easily overlooked by the chemist. The suggestion had been in the literature of nutrition experiments for many years, but it was neglected. Yet since the animal has always been adjusted to live directly or indirectly upon plant tissues, which contain countless substances other than proteins, carbohydrates, and fats, there was no *a priori* reason to doubt that physiological evolution might have made some of these substances essential. Yet had the fact been definitely established in the nutrition laboratory it might have seemed wholly of academic interest. It might well have been doubted that any important deficiency in such substances could occur in practical dietaries. It required such facts as those which have come to light in connexion with beri-beri to establish a wide and practical interest in the matter. The case of beri-beri is, indeed, a very remarkable one. The wide consumption by whole races of a one-sided dietary, the localisation of a specific substance in a grain, an artificial treatment of that grain exactly adjusted to remove the substance, and the occurrence of prominent symptoms as a result of its removal—all these coincidences were necessary to yield so striking a proof that a disease may arise from a dietetic deficiency. Without them it is unlikely that we should have been engaged in this discussion.

Many of us believe that the establishment of this plain case may lead us to discover many others less obvious, and that a new chapter in the subject of animal nutrition is now opening. It is only to be hoped that those who help to write the new chapter will display due caution. The whole literature concerning the relations of food to health and disease is so flooded with baseless theories, with fads and fancies, that it is well to see that no new channel shall be opened to them.

I take it that to obtain satisfactory evidence that a specific diet deficiency is directly responsible for a given complex of symptoms it must be shown that the association between the suspected diet and the symptoms is sufficiently frequent, and the occurrence of the symptoms upon normal diet sufficiently rare, to satisfy the statistician; while to obtain rigid proof we must discover what the deficiency really is, and prove that removing it results in prevention or cure of the symptoms.

In defining our criteria I think it is justifiable to insist upon the fact that the disease need not be wholly absent from individuals using normal diets, but only sufficiently rare. What is absent from a faulty dietary may be the necessary raw material for some particular metabolic process, or some hormone which initiates the process. In such a case all individuals consuming the dietary must sooner or later suffer from whatever is involved in the failure of that process. But it is clear that in an occasional individual assimilation may be faulty: the apparatus in which the process occurs may develop faults, or other factors necessary to its continuance may fail. The final result will then resemble that due to the absence of the raw material. Our criterion must be this: that the disease is absent from, or rare in, individuals taking a normal dietary, but common among those who are rigidly confined to the diet under suspicion. When individuals escape, the evidence that they have added nothing of significance to their diet is difficult to obtain, for all that we know at present about the subject suggests that very small additions may make all the difference to the results. But any considerable degree of individual immunity would be evidence that the etiology of the disease involves some positive factor and not a deficiency alone. In the case of beri-beri and in that of scurvy we have evidence which very nearly, if not entirely, satisfies such criteria. There is scarcely any doubt that they are diseases due to deficiencies of diet and to those alone. The same cannot perhaps be said of any other specific disease.

It is clear that in opening this discussion I can deal only very briefly with individual instances.

Concerning beri-beri, I would like first to say that after reading all the descriptions I could find of cases which are supposed to have occurred under normal dietetic conditions I feel—without pretending to be an expert in matters of diagnosis—that the evidence they offer against the modern view is unimportant. It is to be hoped that the question of its cogency will be discussed.

The present position of the beri-beri question is of particular interest because, owing to the brilliant work of Casimir Funk, we have considerable knowledge concerning the nature of the substance of which the deficiency is responsible for the disease. We have not final knowledge, as Funk will probably be the first to admit. I will venture to say that I myself am more impressed with the objective proof he has given us that the phenomena before us depend upon tangible substances than by the evidence he offers for the actual constitution of what he has so appropriately termed vitamines.

In the case of scurvy the probability that a diet deficiency is an essential etiological factor has, of course, been long forced upon the attention. The remarkable thing is that the probable deficiency should have been so long discussed in terms of known substances. It was so easy to prove that none of those suggested—potassium salts, citric acid, and the like—had anything to do with the matter, and it was always clear that a substance so unstable and so easily lost

[1] Remarks introductory to a discussion in the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on Oct. 21st, 1913.

from normal foodstuffs had to be looked for amid the unknown.

The work of Holst and his colleagues upon experimental scurvy, though it has not told us what antiscorbutic substances may be, has thrown much light upon their essential properties. Anyone who lacks conviction can easily learn how great may be the effect of small deficiencies in diet by repeating the observations of Holst and Fröhlich under rigid experimental conditions.

When we consider in particular acute infantile scurvy we find what seems to be the clearest evidence for the influence of a deficiency produced by the artificial treatment of milk, combined with much conflict of evidence as to the degree and kind of treatment which is capable of inducing the deficiency. This is a well-worn question, but there is some justification for saying a word or two about it. In discussing it I must refer again to the work of Holst and Fröhlich.

It should be noted first of all that the symptoms and post-mortem appearances exhibited by animals such as guinea-pigs after some weeks of a grain dietary are most strikingly similar, even in their details, to those found in Barlow's disease. Any one who has troubled to repeat the observations will hardly doubt that the etiology of the two conditions must be essentially the same. The main symptoms may develop in guinea-pigs in advance of any loss of weight, while, when similar animals are fed upon fresh vegetables the symptoms remain absent, even if the diet be insufficient and weight is rapidly lost. The condition is clearly no result of general malnutrition. After it is established giving fresh vegetables or vegetable juices gradually removes the symptoms, but if heated, dried, or long kept such materials lose there curative power. What is especially interesting in connexion with the point I am dealing with is the fact that in different foodstuffs the antiscorbutic substance exhibits varying degrees of stability, which may suggest either that it is not always the same or that varying conditions affect its stability. Fresh milk was shown by Fröhlich to have a definite antiscorbutic influence in guinea-pigs. Milk, in fact, contains both a substance inhibiting the induction of beri-beri symptoms and another which is anti-scorbutic. They are not the same, as Funk has pointed out, since their stability towards heat is markedly different.

Now, it would seem from the results got in experimental scurvy that the temperature at which the antiscorbutic substances in milk are destroyed can be sharply defined, for Fröhlich found that after heating to 70° C. the milk used by him retained its preventive power, whereas ten minutes' exposure at 98° completely removed it. It is remarkable, therefore, that there should be such uncertainty concerning the effect of milk sterilisation in the case of infantile scurvy. One point is obvious. When data are collected clinically uncertainty as to the precise dietetic history of individual cases must always be considerable, and it is sure that even the occasional consumption of antiscorbutic substances in small amounts makes a great difference in the result. But we may perhaps find, as Funk suggests, a more important factor of uncertainty in the varying qualities of the milk-supply itself. There are a great number of circumstances which induce variations in the ordinary known constituents of milk, and Funk has produced evidence to show that the vitamine related to beri-beri may vary in amount. It occurs to one that such a special substance as an antiscorbutic might well tend to fail toward the end of a long lactation. Mixed milk-supplies must vary much in the proportion they contain of early lactation and late lactation products as well as varying in other ways. It is not at all impossible that one type of milk may, for one reason or another, withstand, in respect of its antiscorbutic power, more severe treatment than another.

I have dwelt a little upon this familiar subject for two reasons. First, because it illustrates certain difficulties inherent in the study of deficiency diseases; and secondly, because it seems to me that recently acquired facts suggest that, in spite of all that has been done, there is yet room for further investigations concerning the relation between milk sterilisation and infantile scurvy; investigations which must be made under conditions more carefully standardised than before. The same may be said with regard to rickets. Even those who are convinced that rickets takes origin from a dietetic deficiency have to admit that it is difficult to find a common factor among the dietaries held to be responsible for the condition. But now that we know how small in amount and how unstable in character certain essentials of food may be, our inquiries into the dietetic history of patients should become more detailed than before, and carried out perhaps with more faith in their bearings.

I should like to touch next upon pellagra, but time permits only the briefest reference. It once seemed probable that this disease might prove to be due to a diet deficiency quite different in nature from those we have hitherto considered. Maize is deficient in the aromatic amino-acid tryptophane, and a certain minimum supply of tryptophane is undoubtedly necessary to life. It would have been interesting to learn that a specific disease might arise from lack of an amino-acid, and long ago, having shared in the discovery of tryptophane, I took a special interest in the etiology of pellagra, and performed a good many inconclusive, and therefore unpublished, feeding experiments. Dr. F. M. Sandwith has lately referred again to the possibility of this deficiency playing its part. But the recent demonstration, so largely due to Dr. L. W. Sambon, that pellagra occurs with some frequency in this country, and in individuals who have certainly not relied upon Indian corn as a basal diet, seems to put the suggestion out of court, as well as the view, much more widely held, that the disease is due to infected maize. If Dr. Sambon is right as to its probable frequency in this country the remark I made earlier with regard to the possibility of deficiency diseases sometimes occurring upon a normal diet can have no bearing here, and we shall have to admit that pellagra is not related to diet.

I propose to close with a brief reference to experiments of my own which relate to the effect of diet deficiencies upon growth. They have no very real relation to the present discussion, and I have already on more than one occasion made their results public. But I quote them now because they offer further conclusive proof that the removal of substances, minute in amount and of unknown nature, can produce an extraordinarily marked effect upon the physiological properties of a dietary. Upon a diet consisting of purified materials (one essential in the process of purification being thorough extraction with alcohol) young rats absolutely cease to grow, even when their consumption of food is quantitatively normal. On the other hand, if what is removed by alcohol be returned, or if very minute amounts of milk or fresh tissue extracts be added, the animals grow quite normally on the same basal dietary. I quote the results with special confidence now, because during a prolonged endeavour to discover the nature of the substances concerned, an endeavour which has continued until now, I have accumulated a great amount of experimental material. On the properly prepared diet not one rat out of many scores has ever continued to grow for more than a few days. Rats are so little prone to scurvy or to anything resembling the symptoms of beri-beri that they serve especially well to demonstrate this growth failure in a pure form.

Being in possession of a diet which, while supporting the animal for considerable periods, does not permit of growth, one was naturally tempted to try its effect upon the rate of development of cancer. Owing to the kindness of Dr. E. F. Bashford in supplying me with material I was first able some 18 months ago to make observations upon a strain of Jensen's rat sarcoma. All the rats to be used for the experiment were injected at the same time with a standard dose of tumour and fed for a few days upon a normal diet. They were then divided, without any selection, into two groups. One group was fed upon bread and milk, the other upon the purified artificial dietary. Otherwise the conditions were precisely the same. At a given period all the animals were simultaneously killed and their tumours dissected and weighed. Thirty-two rats upon bread and milk showed an average tumour weight of 14·5 grm.; 28 rats upon the artificial dietary gave an average weight of 3·9 grm. In the absence from diet of the substances which promote the growth of normal tissue the sarcoma grew at only one-fourth of its normal rate. Such a result has perhaps no more than an academic importance, but it shows that a neoplasm, like a normal tissue, requires for its growth certain at present unknown substances, which it acquires less readily from the tissues than from the food-supply of its host.

Cambridge.

SENSITISED VIRUS VACCINATION IN GONORRHŒA, AND ESPECIALLY ITS COMPLICATIONS.

BY LOUIS CRUVEILHIER, M.D.

THE method of sensitised virus vaccinations devised in 1902 by Professor Besredka [1] was first applied by me [2] to the treatment of gonorrhœa, and especially of its complications. We tried the method in several cases of prostatitis, and the complications of gonorrhœa which we systematically treated by this method were epididymitis, metro-salpingitis, and gonorrhœal rheumatism.

We thought it would be specially interesting to use Besredka's sensitised virus vaccination method for the treatment of *epididymitis*, which of all complications resulting from gonorrhœa is undoubtedly the most frequent. Most of the patients we have treated had been sent to us by our teacher, Dr. Castaigne, and our friends, Dr. Fouquet and Dr. Partuier. All our patients promised to use no other treatment; we advised them, however, to wear a well-made suspensory bandage.

In one case the pain was so acute as to cause the patient to faint, and in other cases the pain radiated towards the heart, the thigh, the loins, the gluteal region or the abdomen, yet it was very soon influenced by the treatment, so that most of our patients who complained of sleeplessness slept well on the very night following the injection. However acute the pain may have been in all the cases which came under our notice it usually disappeared within 12 hours after the first injection, sometimes after 24 hours, and we never observed it 48 hours after beginning the treatment, so that on the next day our patients experienced no more difficulty in standing or walking. In this way some of them were able to resume their work, and one of our patients, who delivered articles at houses, had to interrupt his work during 35 hours only.

The symptoms of local inflammation, such as redness, heat, and tension of the skin over the testicle, decreased and then disappeared together with the pain. In four cases after the second injection only, but more usually after the third—i.e., from five to eight days after commencing the treatment—we noticed the entire disappearance of tenderness on palpation of the epididymis. This organ recovered its normal sensitiveness as well as its usual suppleness and size. As a rule, however, we noticed the persistence of a painless nodule occupying the end of the epididymis. In one case a nodule was still perceptible three weeks, and in another case one month, after commencing the treatment.

In all our patients, none of whom was under the necessity of remaining in bed, all being able to come to our laboratory every morning to be examined or treated, we had the satisfaction of seeing that the various general symptoms usually accompanying epididymitis disappeared within a short time. As our patients were able to sleep and had ceased to suffer their appetite returned, and after two or three days' treatment they no longer presented the sickly, thin, and depressed aspect habitual to patients suffering from gonorrhœa and epididymitis. The fever usually accompanying every inflammatory process in the region of the epididymis disappeared in the course of 24 hours after beginning treatment. Each of our patients had two or three injections administered at intervals of 48 hours. We have not a single relapse to report amongst the various cases which came to our notice.

We have tried the method of sensitised virus vaccination in the treatment of *utero-annexal complications* resulting from gonorrhœa, which so frequently necessitate serious surgical operations. In all the cases examined the results obtained were very good. Usually the very first injection brought about a considerable change for the better and lessened the discharge; after the second, and sometimes after the third, injection the abdomen recovered its suppleness and ceased to be painful on palpation, so that the patients could wear corsets again. The general health soon became excellent, and on examination of the uterus it was found entirely free from congestion, the annexa were supple, and there was only a slight glairy oozing in which it was not possible to discover the presence of the gonococcus. In cases of metro-salpingitis with effusion into the tube the satisfactory result of the method was not less evident, and a fortnight or three weeks after beginning the treatment the swelling noticed at the site of the tube disappeared, and usually only a very slight local sensibility was noticeable at the point of the insertion of the tube into the uterus. The method of sensitised virus vaccination appears to act even in cases of metro-salpingitis of long standing, and we obtained a complete cessation of all painful symptoms as well as of the discharge in the case of a woman whose infection dated from the time of her marriage nine years previously.

We thought it reasonable to try sensitised virus vaccination in *acute gonorrhœal rheumatism*. In cases of gonorrhœal rheumatism with acute pain which we had to treat the action of virus vaccination was very rapid; after four or five injections the patients usually desired to stop the treatment, as they no longer felt any pain or inconvenience on movement. In the case of patients who consented to return a fortnight or a month after the last injection in order to be examined by us we never found that any painful symptoms had reappeared.

In cases of gonorrhœal rheumatism taking the form of hydrarthrosis on the day following the first injection the patients expressed a manifest abatement of pain. After five or six injections a careful examination showed that the joint had become perfectly painless. The patient could bend his joint quite normally and execute every movement with perfect ease.

The form of acute arthritis is certainly the most common form of gonorrhœal rheumatism; now in every case we treated the results obtained were very good. This was specially so in the case of a patient who had been sent to us by Dr. Ravaut, and whom we treated with the assistance of Dr. Marato.

The patient last March became aware of a urethral discharge, as well as very painful symptoms of sciatica which soon obliged him to stay in bed. Notwithstanding the administration of aspirin, salophen, phenacetin, and valerian cachets, in spite of the application of sinapisms and blisters, and of frequently repeated spraying with chloride of ethyl, and of massage with various liniments, and especially with the "balm of Bengué," the patient suffered greatly; he neither relished nor digested his food, and could not sleep although morphine injections were frequently administered. The illness made such rapid progress that by April 15th the whole length of the spine was painful; in the loins the patient felt such distressing shooting pains that he was forced to lie motionless on his back. In vain was it tried to give some relief by means of enemas with salicylate and afterwards with antipyrin, by vibratory massage, by cupping, hot-air applications, and by injecting under the skin of the abdomen blood drawn from the arm. By May 10th the right ankle and knee were attacked also.

On June 11th the first sensitised virus vaccination was done, and at the same time every other drug and local application were given up by the patient. Soon after the injection the pain in the spine had considerably abated. On the 13th a second injection was given, followed by a somewhat violent reaction, which, however, brought about a considerable diminution of the painful symptoms, so that it was possible for the patient, for the first time since the beginning of his illness, to get up without help. On the 17th a third injection was given, after which the pain in the ankle and knee completely disappeared. On the 20th a fourth injection was given. From that time he only felt a dull pain in the upper part of the spine; he could sit up, lie down, stand up, and remain standing without help. The nights became excellent; he began to go up and down stairs; but the injections were continued at three days' interval till the end of the month.

In the opinion of all medical men *chronic gonorrhœal rheumatism* is particularly refractory to all treatment, so that it has been said that "its real treatment must above all be preventive, consisting in the treatment of gonococcic arthritis during its acute stage in order to prevent it becoming chronic." Now we thought that the method of sensitised virus vaccination might be of great use in this form of disease. It was found so in the following case.

The patient, who was sent to us by Professor Dopter, had for more than a year been suffering from pains in the joints of the right foot, knee, hip, and elbow, whilst on the left side the pain was in the heel, the knee, and the wrist. The pain, which was acute and became worse on the slightest movement, particularly on walking, had not been influenced by electric treatment, massage, wrapping the parts in cotton wool, doses of salicylate, nor by the various changes of climate tried by the patient. The pain remained localised in the lower part of the left heel, above the ankle-bone and behind the sheath of the tendons, as well as in the right heel and metatarsal bone joints, so that walking had become an absolute impossibility. Though not very high the temperature was slightly above the normal.

[1] Besredka: Comptes Rendus de l'Académie des Sciences, 1902, vol. cxxxiv., p. 1330.

[2] Louis Cruveilhier: Comptes Rendus de la Société de Biologie, Jan. 4th, April 19th, June 28th, July 5th and 12th, 1913; Berliner Klinische Wochenschrift, August 11th, 1901.

On April 29th Professor Dopter asked us to apply our method and we gave the first injection. On the next day the patient felt decidedly better. Further injections were given on May 1st, 6th, 8th, 12th, and 14th. A considerable diminution of the painful symptoms, in the heel especially, was noted. The injections were repeated on the 16th, 21st, and 24th. Though not entirely cured the patient was considerably better, and on June 2nd the pain was no longer perceptible except in two toes of the right foot. The lameness is better and walking is becoming more and more easy, so that a complete recovery can be expected after a few more injections.

Finally, we have had quite recently the opportunity of treating four patients who had suffered for four, five, nine, and ten years respectively from pains in the joints which seemed to be refractory to all the medicines, such as salicylate and aspirin, usually employed against rheumatism. As these patients had formerly suffered from gonorrhœa, we thought it advisable to try the method of sensitised virus vaccination, and after two, three, and four injections we had the satisfaction of noticing either a considerable change for the better or an entire disappearance of the articular pains.

Experiences of this kind have led us to think that a large number of arthritic diseases, attributed to rheumatism, belong to the domain of gonococcic infection, and that in all cases of rheumatism where the usual treatment does not give any results, and especially when a gonococcic origin can be surmised or traced, it is well to have recourse to sensitised antigonococcic virus vaccination.

The action of Besredka's sensitised virus vaccination has been more especially observed by us in the course of complications resulting from gonorrhœal infection, but it is nevertheless true that we have obtained very good results in the treatment of *acute* and even *chronic urethritis*.

In cases of acute urethritis where our help was sought we always obtained most encouraging results. The pains and local inflammation disappeared in most cases after the second injection, and at the same time the discharge grew less abundant, and also very rapidly lost its yellowish-green colour and its thickness, and took the aspect and fluidity of soapy water. The time of its disappearance was different in various cases, but after an interval of four weeks its disappearance was usually complete. None of the cases we treated showed any complication whatever.

Chronic urethritis appeared to us to be as beneficially influenced by our method of sensitised virus vaccination as the acute form of this disease. From the very first injection we always noticed a rapid decrease of secretion as well as a notable change in its appearance, for it soon became transparent like glycerine. All other disorders imputable to former prostatic infections, such as a feeling of heaviness near the anus, perineal pains, as well as pain in the region of the sacrum, usually disappeared after the first injection.

Remarks.—We have not yet come to any final conclusions concerning the various modifications which, in our opinion, ought to be made in Besredka's method of sensitised virus vaccination in order to adapt it to the treatment of gonorrhœa. Yet we are able to state that, as has been proved by the experiments of Metchnikoff and Besredka[3] in antityphoid vaccination, it is always preferable to inject living sensitised virus. In a certain number of cases, when we had absolutely failed whilst persisting in using dead sensitised virus, we obtained excellent results from the use of living sensitised virus. The serum which we employed in our operations was taken from a she-goat to which we had successfully applied Besredka's subintrant injections of the veins in order to render it immune.[4] We considered that it was not advisable to take from the patient himself the gonococci to be sensitised, and we took them from the cultures which we had had in stock for several months, and several samples of which were obtained by the kindness of Messrs. Maras and Forgeaud. Our injections were principally made in the subcutaneous cellular tissue and were repeated at intervals varying according to the different cases. None of the patients who had recourse to our help showed any sign of severe general reaction. In some cases there was a slight rise of temperature during the hours which followed the injection. Sometimes we also noticed at the site of the injection some erythema accompanied by a pain which never lasted longer than 48 hours.

Paris.

[3] Besredka: Annales de l'Institut Pasteur, 1901. Metchnikoff and Besredka: Ibid., 1911.

[4] Louis Cruvellhier: Comptes Rendus de la Société de Biologie, July 2nd, 1910.

SOME ADDITIONAL EXPERIENCES OF NERVE SURGERY.

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A CONTRIBUTION on "Nerve Surgery" was made by me to the Sixteenth International Medical Congress, held in Budapest, and was published in THE LANCET of Sept. 4th, 1909, p. 706. An opportunity is now taken of tracing the further progress of the cases then referred to, and of adding new ones.

The operation for facial paralysis by facio-hypoglossal anastomosis has proved to be a permanent and almost complete success. The patient was shown at the Royal Society of Medicine in 1909, and it was then difficult to distinguish which side of the face had been affected, except for the fact that there was, in repose, a very slight droop of the left angle of the mouth. All the movements on that side of the face were perfect, there was a total absence of associated movements of the tongue and face, and the tongue was protruded directly and without any deviation.

Of the cases of operation on the brachial plexus[1] one was for Erb's or the upper arm type of infantile paralysis, where the anterior branch of the fifth cervical nerve was grafted into the sixth, with gradual recovery of power in the biceps and partial recovery in the deltoid,[2] the fibres to these muscles on the outer and upper part of the fifth nerve cord being split off and inserted into the sixth nerve cord. Improvement took place in the deltoid in so far that three years after the operation the arm could be abducted 8 inches from the side, when the scapula was held. A better result would have been obtained if the significance of a paralytic subluxation of the shoulder had been recognised and the looseness of the capsule rectified as a preliminary step.

A case of severe laceration of the brachial plexus and complete paralysis of the right arm was also reported upon.[3] Here there was absolute and complete paralysis of the whole of the muscular and sensory area supplied by the brachial plexus. All the nerve roots were found to have been torn apart, and were matted together by fibrous tissue; scar tissue also intervened between the proximal and distal segments of the nerves. The scar tissue was excised and the proximal and distal segments of the plexus were sutured together *en masse*. Five years afterwards—that is, in March, 1911—the recovery of motor power had extended to the biceps, brachialis anticus, and the deltoid. The patient could flex the forearm fully and abduct the upper arm to a right angle, sensation had returned over the distribution of the upper external cutaneous branch of the musculo-spiral nerve and over the internal cutaneous branch of that nerve, and recovery is still slowly progressing.

Neuroplasty on the popliteal nerves, after anterior poliomyelitis, has not been by any means so successful, and an explanation may be found in Warrington and Murray's hypothesis[4]—viz., that, "there may be sufficient nerve cells left to supply one group of muscles, but insufficient to supply two"; or, to put it in another way, there are enough cells to supply the internal popliteal nerve, but not the external as well, and *vice versâ*. In one case where the distal part of the external popliteal nerve was grafted into the internal no result followed, perhaps due to the fact that there was also some degeneration in the internal trunk, or that the remaining nerve cells were insufficient.[5]

In a second case, one of paralytic equino-varus, where the distal part of the external popliteal was grafted into the internal popliteal nerve, no sign of recovery was observed during two years, and then the area of the previous operation was exposed. It was then found that the grafted portion of the external popliteal nerve was evidently undergoing regeneration, as shown by the increasing size of its distal part as compared with the free proximal part, and by its whiteness, roundness, and firmness. It was further noted that direct stimulation of the distal or grafted portion of

[1] A. H. Tubby: Deformities, second edition, p. 747.
[2] Ibid., p. 676.
[3] Ibid., p. 760.
[4] Nerve Anastomosis in Infantile Palsy, THE LANCET, April 2nd, 1910, p. 912.
[5] A. H. Tubby: Loc. cit.

FIG. 1.

To illustrate a case of paralysis of the left suprascapular nerve before operation. Note the hollows above and below the spine of the scapula.

FIG. 2.

Another view of the patient's condition before operation.

FIG. 3.

Showing the condition of the patient three years after operation on the left suprascapular nerve. Note that the suprascapular fossa has entirely filled up and the infrascapular nearly so

FIG. 4.

Another view of the same patient three years after operation.

the external popliteal nerve caused contraction of the anterior and external leg muscles. Here the outlook may be described as distinctly hopeful.

One example of talipes calcaneus, where the nerves to the soleus and gastrocnemius were separated from the internal popliteal trunk and grafted into the external, showed partial recovery during a term of three years, but the condition has been stationary for the next three years; that is, whilst the patient has recovered sufficient voluntary power to plantar-flex the foot when it is off the ground, yet when seen in July, 1913, the improvement in muscular strength had been arrested. And a similar remark may be made of another case of talipes calcaneus where the range of ankle movements became almost normal, without, however, there being sufficient strength to lift the weight of the body on the toes of the affected foot alone. Such is the record up to date of cases of nerve-anastomosis and neuroplasty reported previously.

We must now pass on to more recent cases.

CASE 1. *Traumatic lesion of the brachial plexus; operation; nearly complete recovery.*—A male was admitted to Westminster Hospital on Sept. 9th, 1909, with a history that 12 months ago he had been knocked down by a heavy wagon. He stated that his shoulder had been dislocated and the dislocation had been reduced, but he was unable to use his arm. On admission it was noted that whilst movements from the elbow downwards were good, with the exception of full power of extension of the fingers, there was a partial loss of voluntary movement at the shoulder-joint. Sensation was present below the elbow, but dull in places. Electrically, it was found that the biceps reacted, but there was no response of the supra- and infra-spinatus, deltoid, triceps, extensor carpi radialis longior and brevior, and of the extensors of the wrist. He was operated on on Jan. 24th, 1910, and the brachial plexus was exposed. There was found to be marked thinning of the fifth and sixth cervical nerve-cords just before they joined the seventh, and the fifth and sixth cords were surrounded by fibrous tissue. This was dissected away and the thinned cords were enveloped in Cargile membrane. Recovery set in rapidly and the affected muscles began to regain power, except the extensors of the wrist, where recovery has been much delayed.

CASE 2. *Injury of the suprascapular branch of the brachial plexus; operation and recovery.*—A male, aged 30 years, was brought to me by my friend Mr. A. Scott-Turner on May 13th, 1910. Ten months before this, in August, 1909, he was yachting, and one night the boat was rolling very heavily. In the morning he woke up with pains in his shoulder. He was aware of having hurt it in the night, and he thought it possible he might have struck his shoulder against the side of the bunk. The pain continued for three weeks, and he noticed he could not raise his arm so well as before. The loss of power increased and he consulted Mr. Scott-Turner. When the patient came to see me the arm hung by the side, and it could not be held up for long without support. External rotation was limited, and there were two deep hollows (Figs. 1 and 2) above and below the spine of the scapula, evidently due to the wasting of the supra- and infra-spinatus. The posterior fold of the axilla was less full than normal, and on testing these muscles electrically there was no reaction to galvanism or faradism with any bearable current. It was evident that the suprascapular nerve was involved, but it was impossible to say if it was torn, if it had merely been stretched, or if it was embedded in cicatricial tissue. An exploratory operation was therefore done on May 31st with the assistance of Mr. E. R. Carling and Mr. H. F. Strickland, Mr. Scott-Turner giving the anæsthetic.

A triangular flap was turned up over the subclavian triangle with the apex towards the point of the shoulder. The omo-hyoid was situated very low down, and crossed the triangle immediately above the clavicle. Search for the suprascapular nerve proved long and tedious, as it was abnormal in its origin and course. It was found that a nerve-trunk came from the outer side of the plexus. On testing with sterilised electrodes we ascertained that this cord was composed of the outer head of the median and possibly of the suprascapular. To verify this anatomically the clavicle was sawn across and the cord traced downwards. Opposite the lower border of the clavicle a branch of the cord above mentioned was discovered, which on being traced backwards to the upper border of the scapula was evidently the nerve we were in quest of. About half an inch from the spot where this nerve separated from the outer head of the median it was seen to be embedded in cicatricial tissue. Electrical stimulation above this point gave a very feeble reaction in the supra- and infra-spinatus, whereas stimulation below gave a full reaction. The cause of the paralysis was therefore evident. The scar tissue was dissected away, and a piece of subcutaneous fat was freed so as to form a flap, which was fixed around the site of compression of the nerve. It appeared to us that the abnormal course of the nerve threw light on the injury, and we thought that it must have been compressed during sleep, as the patient had rolled to and fro in his bunk. Another hypothesis was that his shoulder was wrenched and hæmorrhage took place, but the fact was that there was no bruising seen after the accident. Three weeks after the operation it was thought that the fossæ were beginning to fill, but no voluntary movement was present in the muscles. On July 14th, six weeks after the operation, there was definite reaction to galvanism in the muscles. Although the supra- and infra-spinous fossæ were still flat, yet the upper one had begun to fill up. Six months afterwards the fossæ had almost filled, and the patient could raise his arm to the full and hold it there. He could also rotate the arm well externally, and the power has gradually increased until now, when it is nearly as good as on the other side. This case was shown at the Congress, and the condition three years afterwards is shown in Figs. 3 and 4.

Four Cases of Injury of the Ulnar Nerve and of its Branches.

CASE 3. *Divided ulnar nerve in the middle of the forearm; operation; recovery.* A woman, aged 48, was admitted to Westminster Hospital on Jan. 17th, 1908. Two months previously she had cut the middle of the inner border of the forearm with a glass bottle. The flexor sublimis digitorum was found completely divided, and the profundus was much lacerated. No lesion of the nerve was discovered at the time, and the ulnar artery appeared to have escaped injury. The wound was sewn up and the arm put up on a splint. When the wound was healed and the splint removed, complete paralysis below of the ulnar nerve was discovered. Reaction of degeneration was present in the interossei muscles and in the hypothenar eminence.

An operation was performed on Jan. 27th—i.e., ten weeks after the injury. The ulnar nerve was found severed, with half an inch of fibrous tissue between the ends, both of which were bulbous, the upper being much clubbed. Both ends were deviated from their track and turned outwards. Each end was freed, and the sections of the nerves brought together and sutured with catgut. The junction was refreshed and surrounded by Cargile membrane. On Feb. 7th—i.e., ten days after the operation—it was noticed that the ulnar side of the ring finger was sensitive to touch and pain, and when the little finger was pricked sensation was referred to the ring finger. With massage and faradism she afterwards regained complete sensation and good movement. The first dorsal and other interossei muscles were acting normally, although the hypothenar and the first dorsal prominence were not so marked as in the other hand. Gradually the affected hand became quite useful.

CASE. 4. *Ulnar nerve injury at the wrist; division of the superficial branch and bulbous condition of the main branch; operation; partial recovery.*—A woman, aged 21, was admitted to Westminster Hospital on Nov. 29th, 1909. On August 11th of that year she cut her left wrist with a bottle; the wound was stitched up, and when it was healed she noticed a loss of power in the fourth and fifth fingers. The hand was somewhat wasted, and the interosseous spaces on the back of the hand had begun to be hollow. On admission there was loss of sensation in the cutaneous distribution of the ulnar nerve, loss of power on separating the fingers, and abduction of the little finger. A puckered scar, 1½ in. long, ran obliquely upwards and inwards, from near the middle point of the front of the wrist to the ulnar border.

At the operation, within a few days of admission, the flexor carpi ulnaris was exposed and its ends turned aside. In a mass of scar tissue the superficial branch of the ulnar nerve was found, divided; and on the main trunk of the nerve there was a small bulb, but the continuity of the nerve was complete. The ends of the superficial branch were joined by catgut, and the thickening on the main trunk was freed from scar tissue and surrounded by Cargile membrane. On Oct. 10th, 1910, nearly a year after the operation and 15 months after the injury, sensation had returned to the fingers, except that touch was rather dull on the inner side of the little finger, which was still abducted. The muscles of the hypothenar and first dorsal interossei eminences were filling out. Electrical tests showed diminished reactions to faradism in the interossei muscles of the hand, but no polar changes to galvanism.

CASE 5. *Division of deep branch of the ulnar nerve; neuroplasty; partial recovery.*—A man aged 20, was admitted to Westminster Hospital on Oct. 3rd, 1912. On August 17th he had cut his wrist with broken glass. The wound was situated just above the pisiform bone, and was stitched up at once. On admission there was found to be loss of sensation both to pain and touch over the palm from the wrist to the base of the fifth finger, otherwise sensation was present. The interossei muscles, especially the first, were wasted. The patient could not separate the fingers with ease. On Dec. 7th the ulnar nerve and its branches at the wrist were dissected out, and in the scar tissue a bulbous enlargement on the deep branch of the nerve was found. The branch was twice its normal diameter at this spot. The bulb was excised, the ends sutured, and the junction protected by membrane. It was evident that the main trunk and its superficial branch had escaped. It was curious to note that the injury to the deep branch was situated 1 to 1½ in. distant from the deep scar on the skin, and was probably caused by the penetration of a pointed piece of glass. On Jan. 17th, 1913, it was noticed that there was no response to faradism in the interossei and there was a typical sluggish reaction to galvanism, whilst the lumbricales reacted to both currents. Since then the interossei have begun to respond slightly to both currents and the fingers are regaining strength and usefulness.

CASE 6. *Traumatic lesion of the deep branch of the ulnar nerve; nearly complete recovery.*—A boy, aged 12, was sent to me on Jan. 20th, 1910, on account of a partially clawed hand, following a wound on the inner side of the front of the wrist, at the end of August, 1909. The cut was a deep one and had detached the pisiform bone with the flexor carpi ulnaris attached to it, also one of the deep flexor tendons of the little finger and a fairly large nerve were severed. When I saw the boy this scar was more than 2½ inches long and extended to the middle of the palm inwards and upwards from the inner side of the base of the fifth finger. He had complete paralysis of the interossei. The fourth and fifth fingers were clawed, whilst the second and third were becoming so. Sensation in the fingers was defective. On the 31st a long and rather difficult dissection was made, and it was ascertained that the deep branch of the ulnar nerve was embedded in dense fibrous tissue at the base of the third metacarpal bone. The difficulties arose from the depth of the wound, from hæmorrhage from the deep palmar arch, and from the density and extent of the scar. The last was dissected out, the nerve completely freed, and its compressed portion wrapped in Cargile membrane. On Jan. 31st, 1911, it was noted that the fingers could be nearly straightened out voluntarily, the interosseous hollows were being filled up, the fingers would separate and approximate, and sensation to pain and touch were almost normal.

Deductions.

1. Brachial plexus lesions, if traumatic, are hopeful, if the loss of power has not existed for years. If due to other causes the outlook is not so good. However, we should not despair of a case recovering, even five years after the operation, provided that the improvement has set in within three months after the operation and is continuous.

2. Popliteal neuroplasty for infantile paralysis has proved disappointing for the reasons given previously.

3. Injuries about the wrist should never be sewn up until the continuity of the nerves has been ascertained, and until all the electrical reactions have been tested.

4. If the lesion of the nerve is compression by a scar the outlook after operation is most hopeful. If the nerve has

been severed primary operation is very hopeful, but secondary suture rarely permits a complete recovery.

5. No case, however, of traumatic nerve lesion should be regarded as hopeless, in view of the achievements of neuroplasty.

Finally, I should like to make a note on a painful condition connected with enlargement of the head of the first metatarsal bone, and I beg to refer to those cases where there is not only tenderness on the inner side of the joint, but also severe pain on its outer side and in the first interdigital space. This is a condition special to those cases where there is lipping of the joint surfaces and a deposit of osteophytes, and the cause appears to me to be as follows: On dissecting the part there will frequently be found a communicating branch passing from the digital trunk of the anterior tibial nerve to the corresponding nerve on the plantar surface. This communicating branch arises opposite the most prominent part of the head of the bone and passes immediately downwards over the capsule of the joint, to which in inflammatory cases it is often adherent, and it joins the digital branch of the internal plantar to the outer side of the great toe. It is easy to see how painful compression may arise, and the remedy I have adopted is simple—i.e., to dissect away the communicating branch and remove the osteophytes.

Harley-street, W.

PUBLIC MEASURES FOR THE PREVENTION OF TUBERCULOSIS.[1]

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THE spread of tuberculosis in any community can only be efficiently and successfully checked by the adoption of public measures which will form a coördinated scheme for attack on the disease. Tuberculosis being to a large extent a disease of ignorance and misery, our efforts to prevent it must be directed towards the social conditions and insanitary surroundings of the poor. It is essential that a very close coöperation must be established between voluntary action and Government and municipal efforts in order that the spread of the disease can be controlled and proper means provided for the treatment and cure of those afflicted.

The general measures for the control of tuberculosis will be somewhat as follows: (1) Voluntary and compulsory notification; (2) removal of affected children from school and home; (3) treatment of children in special children's sanatoriums; (4) education of the general public with regard to the disease; (5) provision of municipal dispensaries in every community; (6) provision of sanatoriums for the cure of early cases; (7) institutions for advanced cases; (8) home training and supervision amongst the working classes; (9) rigorous supervision of the milk supply; (10) extermination of tuberculosis amongst cattle; (11) assistance to family in the absence of the breadwinner; and (12) provision of suitable employment to cured cases and those in whom the disease is arrested.

Voluntary and compulsory notification.—Tuberculosis being essentially an infectious disease it is desirable that a complete notification of all cases should be made to the officials who are responsible for the public health, so that they may be informed as accurately as possible of the existence of every person infected with the disease.

In England voluntary notification has been superseded by compulsory notification, at least so far as pulmonary tuberculosis is concerned, and although it is open to question whether or not it is desirable to notify the private patients of a medical man, yet if a certain amount of discretion is exercised there can be no doubt but that compulsory notification is in the general interest of the community, although it may press hardly on individual cases. A recent order from the Local Government Board, in London, compels the notification of every inmate of a public institution suffering from any form of tuberculosis. This notification must be made on special forms by the physician attending the case, and for which he receives a small fee of 1*s*. As soon as notification is received by the health officer a visit is made to the home of the patient, and a careful inquiry as to his personal condition and surroundings is made; if, in the opinion of the health officer, his home surroundings are such as to make it unsafe for him to remain power is given for the patient to be removed to some institution, but this power is very rarely exercised.

In large cities and habitations where a great amount of overcrowding exists, the treatment of the advanced case of tuberculosis is of supreme importance. If he is allowed to live in the same dwelling and share the same room as his wife and children, it will almost certainly happen that one or all of his family will become infected with the disease, and therefore it is absolutely necessary that he should be removed to some safer surroundings unless he is able to have a room to himself and to look after his own personal cleanliness. It is of no use to keep a patient in a sanatorium for six months and then discharge him as incurable, to spend the rest of his life in an overcrowded cottage where he may spread the infection to a new generation. Provision ought to be made, either by Govenment or by municipality, for the detention and comfortable treatment of all cases of incurable tuberculosis. I am not in favour of exercising compulsory powers of removal from a man's own home, but if it is for the protection of healthy people, then removal ought to be made compulsory; but I think it will be some time before public opinion is ripe for such measures.

The health authority will disinfect and clean the clothing and bedding of any notified case, and then will also carefully disinfect the house in which he has lived. Very often the patients complain of this attention to their homes and their clothing, but it is essential that it should be done for the protection of the future residents of the house. It is also the practice to notify to the health authorities any change of address of a tuberculous person, so that they may keep in touch with any house in which he may live.

On the whole, compulsory notification will prove useful in the fight against the disease, but it should only be used in a wise and gentle manner, as otherwise it is liable to cause personal discomfort and may have the effect of ostracising the patient from society. If it is pushed too far it may also have the effect of preventing him from earning his livelihood by reason of his fellow-workers having a fear of infection in the workshop or factory. Although many countries are still doubtful as to the wisdom of enforcing compulsory notification, yet from the point of view of suppression of an infectious disease it cannot be denied that with care and consideration the compulsory notification of tuberculosis is bound to do good.

Removal of affected children from school and home.—The medical inspection of school children is now thorough and complete in Great Britain, as in many other countries, with the result that a fair number of children of school age are recognised as suffering from pulmonary tuberculosis, although this number is not so large as one might be inclined to expect. Pulmonary tuberculosis is comparatively uncommon amongst school children, whilst the other forms of tuberculosis are more often seen. When a child is recognised as suffering from open tuberculosis it should at once be removed from school, mainly for the protection of the other children, as it is possible for one child in an overcrowded and badly ventilated schoolroom to infect several of its fellows. In the case of a family the infected child should invariably, if possible, be provided with separate accommodation, or, better still, removed from the family circle until recovery has taken place, but on no account should the child sleep with any other children or even with its parents.

Treatment of children in special children's sanatoriums.—The provision of special sanatoriums for children is, I am glad to say, in England making steady and rapid progress; many of these sanatoriums have been provided by the education authorities, with excellent results. It has been found undesirable for children to be treated in a sanatorium for adults; hence it is necessary to provide special institutions for them. The children's sanatorium has the double advantage of continuing the education of the child and at the same time providing the means of cure of the disease. In Germany, where the climate is more suitable for this treatment, a great many of such sanatoriums have been

[1] Being a report presented at the Eleventh International Anti-Tuberculosis Conference, Berlin, Oct. 22nd to 25th, 1913.

provided, and in Great Britain much success has attended their adoption.

Education of the general public with regard to the disease.—The main point in the campaign against tuberculosis must be in the education of the general public with regard to the disease. The National Association for the Prevention of Consumption aims almost entirely at this part of the work; it has numerous branches in most of the large cities and towns of the British Isles, where the work of education of the public is steadily pressed forward. A travelling exhibition, provided with models of everything necessary in the treatment of the disease, is constantly moving round from place to place, and demonstrations are given by competent teachers on the management and nursing of children, and the prevention of tuberculosis, in which popular lectures are given each evening by experts. In this way an enormous amount of information is steadily disseminated. Education of school children is constantly going on, and the teachers themselves are instructed in the methods of prevention and treatment of tuberculosis. Literature is scattered broadcast throughout the land, and illustrated posters are affixed in every town, so that every possible means is used to convey to the public the information so much required.

Provision of municipal dispensaries in every community.—The public dispensary has been proved to be of value in the treatment of poor persons afflicted with tuberculosis, and it is suggested that in every town the health authority should provide the municipal dispensaries where the poor may receive attention, and where the most careful inquiry can be made with regard to their families. The house of every infected person is carefully inspected and the accommodation noted. Advice as to nursing, isolation, and treatment is given in every case, and where necessary rigorous action is taken by the health inspectors. In this way it is hoped that every affected person may have the opportunity of receiving advice and treatment, together with assistance to his family if necessary. The National Insurance Act in England will quite revolutionise our present methods in dealing with tuberculosis. Every insured person is entitled to special treatment and if necessary to sanatorium benefit. In the case of anyone transferred to a sanatorium the dependents of the family will receive 10*s.* per week for six months, and if necessary further assistance will be given to the affected person. This is a great step in advance, and will undoubtedly induce a great many of the working class to accept treatment in a sanatorium, knowing that their family will be provided for in the meantime.

Provision of sanatoriums for the cure of early cases.—The provision of sanatoriums for treatment and cure is of vital necessity. Tuberculosis in its early stages responds admirably to sanatorium treatment, and it must be our aim in the future to obtain the cases at the earliest possible moment, so that they receive special treatment with a view to cure, and also receive special education and instruction with regard to their manner of living in the future. The sanatorium itself should be reserved for early cases of tuberculosis—it cannot be expected to do much good in advanced cases, and being of a very costly character its resources should be reserved for hopeful and curative patients. In the national insurance scheme such sanatoriums will be erected in every locality, and every suitable case will have the opportunity of cure. The results of sanatorium treatment have been excellent, and it is hoped that they will be still further improved as a better selection of patients is made.

Institutions for advanced cases.—In my opinion the most potent factor in the spread of tuberculosis is the advanced case who is not under proper supervision. The man in the final stages of consumption, who is pouring out millions of bacilli from his lungs each day and who has not physical strength to look after himself or take ordinary care, is a serious danger to the community. These are the people who require the most rigorous supervision and who as a rule are neglected by everybody. The late Professor Koch often said that he attributed the steady decrease in tuberculosis in England to the fact that such a large number of advanced cases of tuberculosis were isolated and treated in the Poor-law institutions of Great Britain; this statement is undoubtedly true, and the very fact that so many were constantly segregated must have had a great influence in the decline of consumption. Special institutions should be provided for advanced cases where they may be made comfortable and happy to the end, but it is doubtful if it would be wise at present to enforce isolation of such cases, although I have no doubt that in the future this will have to be done.

Home training and supervision amongst the working classes.—Tuberculosis being a disease of long standing it is necessary that those who suffer from it must be instructed in the manner of living at home. It is essential that the working man or working woman must attend to his daily duties, in many cases for years, whilst he is suffering from it; hence if he is to live at home with safety he must know how to protect the other members of his family. There is a strong prejudice in England against the working man using a sputum flask in the workshop or factory, so that there is every temptation for him to conceal the disease. It is not desirable, however, that a workman should be treated as a leper because he happens to be infected with tuberculosis, otherwise he is in danger of losing his ordinary place in the labour world and becoming a burden on the community. It is much more necessary that he should be instructed how to take care of his expectoration, and how to prevent the slightest tendency of infection to the healthy members of the community; and if this is done there is no reason whatever why he should not attend to his daily work and associate himself in ordinary social life. There is a great danger of frightening consumptives, and our efforts must be towards removing that fear and educating the general public in the right direction.

Rigorous supervision of the milk-supply.—The question of a pure milk-supply is of the first importance in every community, and of urgent importance as the staple food of infants and children. Notwithstanding what has been said by many experts in different countries there is no doubt whatever but that a large amount of tuberculosis is conveyed to children by means of infected milk and food. Tuberculosis is very common amongst dairy cows in Great Britain and Ireland—in fact, about 20 per cent. of cattle are infected with the disease at the present time. It is shown, however, that the cows with tuberculosis of the udder are by far the most dangerous, hence only about 2 per cent. of the infected cows are highly dangerous to children. It is the practice, however, in this country to mix all the milk from a herd of cows, so that one cow with disease of the udder may contaminate the whole milk-supply. Whilst consumption is steadily decreasing in this country the same cannot be said for tuberculosis in children. A very large number of the lesions occurring in children are the result of infection from tuberculous animals in the form of food, and every possible step must be taken to prevent such contamination of the food-supply.

Legislation has recently been introduced in England with a view of establishing a pure milk-supply, and it is proposed that all persons offering milk for sale should be registered and their premises periodically inspected. Every cow supplying milk will be under rigorous inspection by the health authorities, and compensation will be paid to the owner of any cow which is found to be suffering from tuberculosis. In the meantime the public are advised to sterilise the milk before being given to infants, with a view to destroying tubercle bacilli and other organisms. In Liverpool a great amount of special care has been taken by the health authority in safeguarding the milk-supply. Special powers have been obtained to inspect the source of all milk coming into the city, and the result has been that I have myself observed a steady decrease in hospital of children suffering from tuberculosis.

The amount of disease which is conveyed from animals to man seems to vary in different countries. In Scotland there is more than in England; whilst in the British Isles there appears to be more tuberculosis conveyed by milk than on the Continent, where it is almost the universal practice to pasteurise the milk before drinking. Whether this be so or not, we are all agreed that in the campaign against tuberculosis every effort must be made to eradicate the disease from dairy cows. This, I admit, is a very costly undertaking, and millions of pounds would be required to do it effectively in England alone. The scheme suggested by Bang, in Copenhagen, has had excellent results, and a similar process should be gradually introduced into every country.

Assistance to family in the absence of the bread-winner.—The question of providing assistance to the family in the absence of the bread-winner during his stay in sanatorium has been to a great extent solved by the provision in the National Insurance Act already referred to, but this work requires further extension, and a central fund ought to be

provided in every community for the special purpose of looking after the family when the parent is undergoing cure, otherwise it is impossible to expect him to give himself up for treatment for any prolonged time.

Provision of suitable employment in cured cases, and those in whom the disease is arrested.—The question of providing suitable employment for cured cases, and for those in whom disease is arrested, is one of great difficulty, although of immense importance. A very great many private employers are now giving such workers out-of-door, easy employment, as it is only in this way that they can be expected to remain well and fight the battle of life. We wish to extend such a practice in every country, and appeal confidently to those employers of labour who have the opportunity of making such provision for their workers.

By adopting a combination of measures such as those enumerated upon, we can confidently hope slowly but surely to exterminate the disease which ought not to be in our midst, but which is provoking such an amount of havoc, misery, and loss of human life.

Liverpool.

THE BACTERIOLOGICAL DIAGNOSIS OF A CASE OF PLAGUE.

BY W. J. TULLOCH, M.B., CH.B. ST. AND.

(From the Bacteriological Laboratory, College of Medicine, Newcastle-on-Tyne.)

THE following case is of interest in that it illustrates some of the many difficulties that exist in recognising cases of plague when they arrive at uninfected ports.

A boy 16 years of age, an apprentice on a grain ship that arrived in the Tyne from Rosario (River Plate), was taken ill on Sept. 10th, 1912. He was seen on the following day by Dr. W. E. Harker, medical officer of the Tyne port sanitary authority, who found him suffering from an indefinite febrile condition with high temperature, and it was noticed that he had a slightly enlarged and painful gland at the angle of the left jaw. In view of the fact that another apprentice had died at a continental port a few days previously from a condition which, as a result of post-mortem examination, was diagnosed as enteric fever, it was thought very likely that this boy had the same disease. The gland steadily subsided, but on the third day of illness signs of basal pneumonia appeared, and three days later the boy died, the cause of death at the time being uncertain.

At the post-mortem examination, made two days after the death of the patient, no gross pathological changes were noted beyond basal consolidation of the lungs, slight pleuritis, and some enlargement of the spleen.

Bacteriological examination.—At the first clinical examination material was taken for bacteriological investigation by puncturing the enlarged gland, and blood was obtained for carrying out an agglutination test with B. typhosus (Sept. 11th). The agglutination test was made at once, and it was found that the serum agglutinated B. typhosus in a dilution of 1/100 in one hour at 37° C. (The bacillus employed agglutinates with most typhoid sera in dilution of 1/100, while a certain number of sera agglutinate it in 1/500 dilution.) The material obtained from the gland—about 0·5 c.c. of fluid—was spread over the surface of three small agar tubes. After 48 hours' incubation at 37° C. four small colonies appeared. These consisted of organisms having the morphological and staining characteristics of B. pestis. Microscopical examination of the fluid had failed to show the presence of organisms.

The above findings indicated a further examination of the case by means of blood culture for the following reasons: (1) That the serum of the patient agglutinated B. typhosus fairly actively; (2) that the apprentice who had died at the continental port and who was said to have succumbed to enteric fever had only been ill five days; and (3) "a severe septicæmia may be present at a comparatively early stage of the disease"—plague (Indian Plague Commission).[1] It was important then in the present case to examine the blood by cultural methods—firstly, to exclude enteric fever, and secondly, in the event of the case being one of pneumonic or septicæmic plague, positive evidence of the nature of the infection would be rapidly and certainly obtained. Fifteen c.c. of blood were obtained by venipuncture of the median cephalic and run directly into 100 c.c. of broth. After 48 hours' incubation at 37° C. a few chains of Gram-negative polar-staining cocco-bacilli were noted in films made from the blood culture. By subculture on agar a plague-like growth was obtained.

The bacteriological examination of the organisms obtained from the gland and from the blood presented no difficulty. The growth on agar and other media and the biochemical reactions were typical of B. pestis, as also were the results of animal inoculation.

Three guinea-pigs were inoculated (rats could not be obtained at the moment). (*a*) One animal was inoculated in the flank subcutaneously with 3 c.mm. of an emulsion of a 24 hours agar culture suspended in 3 c.c. of saline. The animal died on the sixth day, and on post-mortem examination lesions typical of plague were noted—a mass of hæmorrhagic and necrotic tissue at the site of inoculation, injection and enlargement of the glands, and marked enlargement of the spleen, which was filled with hæmorrhagic and necrotic nodules. (*b*) A second animal inoculated with a similar quantity of the 48-hour blood culture died after two days, the examination revealing evidence of septicæmic infection—small hæmorrhages, particularly on the serous surfaces. (*c*) The third was inoculated by Bannerman's cutaneous method. The result was similar to (*a*) above.

A diagnosis of plague was made on the following grounds: (1) the microscopical and cultural characters of the bacillus obtained from the human material and from the lesions produced in the guinea-pigs; (2) the biochemical reactions of the organisms from both sources; (3) the control of the organisms recovered from the animals by culture on bile-salt media; and (4) cultural and histological examination of the lungs, liver, and spleen of the patient revealed the presence of B. pestis in these organs. In the lungs the organism could not be demonstrated in the alveoli, being found only in the capillaries, while the air spaces were filled with a polymorphonuclear exudate containing Gram-positive streptococci. The pneumonia was then apparently secondary and the case one of septicæmic, not of pneumonic, plague, and it seems probable that the gland condition was an early and slight involvement of the lymphatic system preceding septicæmic plague.

Criticism.—The result of the examination by blood culture shows, I think, that this method is one of which a more extensive use might with advantage be made, and one might go so far as to suggest that it would be well if it were employed in every case of febrile disturbance of indefinite nature occurring on ships coming from abroad. Especially is there danger of a wrong opinion being given on clinical grounds in cases of "pneumonia." "Pneumonia" occurring on ships arriving from ports where plague, epidemic or epizootic, is known to exist is potentially pneumonic plague, and before a diagnosis of pneumococcal pneumonia is made the former should certainly be excluded by bacteriological methods. Let us assume that this boy had been the first case of the disease to occur on board the ship, and let us suppose that he had been taken ill two or three days before the vessel arrived in the Tyne. The gland condition would have subsided, and a (clinical) diagnosis of pneumonia would have been justified by the symptoms and physical signs of the case. Again, considering the agglutination of B. typhosus by the serum of the patient along with the physical signs one might well have expressed the opinion that the case was one of ambulant enteric fever complicated by pneumonia. In such circumstances the true nature of the infection would not have been appreciated and the disease might have been widely disseminated. I state this hypothetical case to emphasise the importance of the information obtained from blood culture in making the diagnosis of indefinite febrile maladies occurring on board ship. As blood culture is a certain method of diagnosis in the septicæmic form of plague, and is a valuable aid to the diagnosis of other forms of the disease, this procedure should in my opinion be made a routine practice in the examination of such cases. Not only does it give definite information in a large number of cases of infection with B. pestis, but it will frequently serve to exclude infections with other organisms.

Newcastle-on-Tyne.

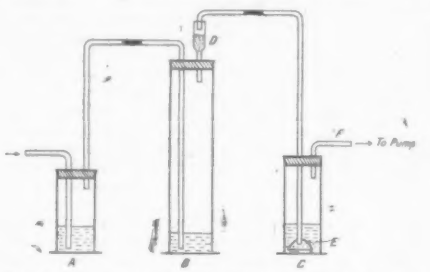
[1] Journal of Hygiene, vol. xiii., No. 2 (Extra Plague Number).

THE ESTIMATION AND SIGNIFICANCE OF AMINO-ACIDS IN THE URINE IN DIABETES MELLITUS.

BY P. J. CAMMIDGE, M.D. LOND.

IN 1894 Mies[1] reported the case of a little girl suffering from diabetes in whose urine an abundant deposit of tyrosine crystals occurred. Since that date Nicola,[2] Abderhalden,[3] Mohr,[4] and others have described cases of glycosuria in which as much as 0·4 grm. per litre of that substance has been excreted in the urine. Bergell and Blumenthal[5] also found that tyrosine occurs in the urine of depancreatised dogs. Very little attention appears to have been devoted to other amino-acids, however, or to the total output in various types and grades of glycosuria. This is due, no doubt, largely to the lengthy and laborious processes generally employed for their separation and estimation. During the last few years I have met with several cases of diabetes in which tyrosine crystals appeared in the urine when unfavourable clinical symptoms leading to a fatal issue set in, and it occurred to me that if one could easily obtain even a rough estimation of the amino-acid excretion it would be useful in prognosis and treatment.

The difficulties attending the direct estimation of the acetone bodies in the urine have led to the degree of acidosis being more generally determined indirectly by the amount of ammonia nitrogen passed. For this purpose two methods are commonly employed, Folin's[6] and Malfatti's.[7] In the former the ammonia present in a measured quantity of the urine is aspirated through a known quantity of standard sulphuric acid, and the amount of acid neutralised ascertained by titrating with a standard solution of caustic soda. For this purpose the apparatus shown in the figure is used.



Sketch of apparatus used in the Folin method of estimating ammonia in urine.

A is a wash-bottle containing strong sulphuric acid to remove ammonia from the aspirated air. Into B are placed 25 c.c. of the urine, a few c.c. of paraffin oil (to prevent frothing), and about 1 grm. of anhydrous sodium carbonate. This is at once connected up to C, which contains 25 c.c. of decinormal sulphuric acid, diluted with 25 c.c. of ammonia-free distilled water, and a few drops of a solution of alizarin red. D is loosely packed with wool to prevent any sodium carbonate being carried over, and the other end of the delivery tube is provided with a Folin's absorption apparatus (E) to bring the aspirated air into intimate contact with the acid in C. When the connexions have been made, F is joined up to a filter-pump attached to the water-supply and air drawn through for two hours. At the end of that time the apparatus is disconnected, and E is washed with ammonia-free distilled water into C, the contents of which are then titrated with decinormal sodium hydroxide solution. The figure obtained subtracted from 25, the quantity of decinormal sulphuric acid taken, gives the amount of acid neutralised by the ammonia in the 25 c.c. of urine. To express this as ammonia nitrogen it is multiplied by 0·0014 grm., and from that the percentage and the total ammonia nitrogen in the output of urine for the day can be calculated.

The Malfatti process depends upon the fact that ammonia salts react with formaldehyde in neutral solution to form hexamethylenetetramine, setting free the acids with which the ammonia was combined. These can then be titrated with an alkali. 10 c.c. of the urine are diluted with about 50 c.c. of ammonia-free distilled water and three or four drops of a 1 per cent. alcoholic solution of phenolphthalein added. Decinormal sodium hydroxide solution is run in from a burette and the reading taken when a permanent faint pink colour develops. 3 c.c. of a neutral solution of formaldehyde (prepared by diluting commercial formalin with an equal volume of distilled water, and adding just sufficient decinormal sodium hydroxide to neutralise the mixture, using phenolphthalein as the indicator) are then added, when it will be found that the pink colour disappears. A further addition of decinormal sodium hydroxide is now made until the pink colour is just restored, and the reading is again taken. The difference between the first and second readings is multiplied by 0·0014 grm. and the result by ten to obtain the percentage of "ammonia" nitrogen. From this the content of the 24 hours urine is readily calculated. The addition of neutral potassium oxalate has been shown by Mathison[8] to give a sharper end-point when phenolphthalein is used as the indicator.

Amino-acids react like ammonia to formaldehyde, so that the result obtained by the Malfatti process is the sum of the ammonia and the amino-acids present in the urine, but with Folin's method the ammonia only is estimated. If, therefore, a urine is examined by the two processes the difference between the results will be a measure of the amino-acids present. I have been employing this method of estimating the amino-acid nitrogen for some time and obtained results which have proved of great service in treating diabetes and giving an opinion as to the probable course of my cases.

The amino-acids are comparatively simple chemical bodies of known molecular structure, consisting of an acid, of more or less complex composition, in which an NH_2 group is substituted for one of the hydrogen atoms attached to the carbon atom nearest to the acid radicle. Unlike the proteins, albumoses, and peptones, the amino-acids can be obtained in a pure crystalline form, and constitute the "Bausteine," or building stones, of which the proteins are composed. The varieties and proportions of the amino-acids in different proteins vary considerably, and this, as we shall see later, is a matter of considerable importance in the treatment of diabetes. It has been proved conclusively that the proteins of the food are broken down by the digestive processes into the individual amino-acids of which they are composed, and that it is these, and not, as was at one time supposed, the albumoses and peptones which are absorbed by the walls of the intestine. Their subsequent fate is to a certain extent a matter of speculation, but they undoubtedly constitute the material from which the tissues obtain their supply of nitrogen, and they also contribute to the production of energy. Some observers have maintained that the amino-acids are resynthesised to blood proteins during their passage through the intestinal wall. Others have held that they are partly de-nitrogenised in the course of their absorption, and that the process is carried still further in the liver, the liberated ammonia being converted into urea by the hepatic cells and the non-nitrogenous portion used as a source of energy. A third, and more recent, view is that the amino-acids products of digestion pass into the circulation as such, and are transported to the tissues in the blood-stream; those that are needed for repair of the tissues are then utilised for that purpose, while the unsuitable and unneeded amino-acids are broken down, the nitrogen being converted into urea and the non-nitrogenous portion transformed into dextrose in some instances and in others directly oxidised into carbon dioxide and water like the simple fatty acid constituents of fat, furnishing in either case a source of energy for the organism. Since amino-acids have been most frequently met with in conditions in which there has been serious disease of the liver, such as phosphorus poisoning and

[1] Münchener Medicinische Wochenschrift, 1894, No. 34.
[2] Giornale d. R. Accad. di Med. di Torino, 1904.
[3] Zeitschrift für Physiologische Chemie, xliv., p. 17.
[4] Deutsche Medicinische Wochenschrift, 1905, p. 458.
[5] Pflueger's Archiv, 1904, cili., p. 6273.
[6] Zeitschrift für Physiologische Chemie, xxxvii., 161, 1902-3.
[7] Zeitschrift für Analytische Chemie, xlvii., 273.
[8] Brit. Med. Jour., 1909.

acute yellow atrophy, it has been assumed that the splitting off of nitrogen and formation of urea from the amino-acids not needed for repair purposes by the tissues takes place in the liver, but Folin and his fellow-workers [9] consider that the process is not confined to any particular organ and may be carried out by various tissues, very probably to a preponderating extent by the muscles. In addition to severe hepatic diseases, diabetes, and after extirpation of the pancreas in animals, amino-acids have been met with in the urine in typhoid fever, small-pox, erysipelas, pneumonia, leukæmia, gout, during pregnancy, and in children with gastro-intestinal disorders. In some of these conditions at least the amino-acids found in the urine are not primarily of alimentary origin, but arise from the breaking down of the tissue proteins, and they are excreted in the urine because the quantity formed is too large for the body to deal with in the ordinary way by de-aminisation and oxidation, &c., or the tissues have more or less completely lost their power of splitting some of the amino-acids formed.

The conception of glycosuria as a symptom of a disturbance of metabolism which, although varying in severity, is essentially the same whatever the primary cause may be, is now very generally accepted and has done much to improve our methods of treatment. It is important, however, that we should distinguish two, or possibly three, stages if satisfactory results are to be obtained. In two of the three the defect in metabolism is confined to a more or less complete inability to make use of the sugar derived from carbohydrate foods, but amino-acids are still available as a source of energy, and the body makes use of these, supplemented in the milder forms by a certain amount of sugar derived from starchy foods, and fats for its needs. In the third form, to which the name "diabetes" is confined by some writers, the power to metabolise amino-acids is diminished, with the result that these bodies appear in the urine and gradually increase in amount as the metabolic defect becomes more pronounced. Even in the most serious cases, however, some of the amino-acids are de-aminised and carried as far as dextrose, thus contributing to the sugar excreted in the urine, while the fatty acids of others are imperfectly oxidised and give rise to the acetone bodies (acetone, aceto-acetic acid, and oxybutyric acid) that are passed at the same time. Estimations of the amino-acids, acetone bodies, and sugar give therefore a much more complete picture of the state of the metabolism than any one of these taken alone, and by considering them in conjunction with the effects produced by a diet of which the qualitative and quantitative composition is known we can determine the stage that has been reached and the probable expectation of life.

In this communication I shall confine my remarks to the amino-acids, and only deal with them from the aspect of their determination by the method referred to. The varieties and quantities of the different kinds met with in various types of glycosuria and at successive stages of the condition are matters that are under investigation at the present time. I have found that the urine in simple cases of glycosuria shows no amino-acid nitrogen by the method described, excepting when there is evidence of a gouty condition or serious hepatic derangement; there may then be as much as 0·5 grm. in 24 hours. In such cases the urine may contain traces of acetone, but it is free from aceto-acetic and oxybutyric acids. When secondary disturbances of metabolism occur and the patient has reached the third stage, the amino-acid nitrogen is small in amount at first, 0·05 grm. or less, but as the disease progresses, and especially if it is not controlled by suitable treatment, it generally increases rapidly, often much more rapidly than the acetone bodies, until 2·0 grm. or more are being excreted daily. Finally, the amino-acids may be present in such abundance that the relatively insoluble tyrosine crystallises out and can be recognised in the urinary sediment with the microscope. In some cases the excretion of amino-acids and acetone bodies run parallel, but this, as I have just pointed out, is not always the case, and one sometimes meets with a high excretion of acetone bodies and a low amino-acid nitrogen, while other cases show the reverse condition. The former often do surprisingly well, but the latter frequently die suddenly, with symptoms of heart failure, so that as a rule I place more reliance on the amino-acid content of the urine in giving a prognosis, particularly when the output cannot be completely and readily controlled by suitable dieting.

The question of diet is obviously an important one in all cases where amino-acids are found in the urine. It is now generally recognised that many diabetics, and more particularly those of a severe type, do better when the amount of meat taken is strictly limited and intervals of meat-free diet are interposed. This is the basis of the "oatmeal cure," the "potato cure," and similar methods of treatment, and of the vegetable days which are prescribed for most diabetics who are being treated by modern methods. The reason for their use is often not appreciated, however, and they are consequently prescribed in a haphazard manner. Their usefulness really depends upon the different proportions, and to a certain extent the different varieties, of the amino-acids which go to build up proteins of animal and vegetable origin. Animal proteins contain a relative excess of those forms which the defective metabolic powers of the diabetic find it difficult to break down and utilise for purposes of energy production, whereas vegetable proteins are comparatively poor in these constituents as a rule and contain a higher proportion of amino-acids which can be made use of to supply the energy needed by the tissues. Egg protein resembles vegetable protein so far as the diabetic is concerned, so that eggs can be used with safety in many cases where other animal proteins are contra-indicated. The protein of milk comes under the same category as other animal proteins, and one is therefore bound to forbid or strictly limit the use of milk, even when it has been deprived of its sugar, and also the numerous "diabetic" biscuits and bread substitutes which are now largely made of casein in place of the less palatable gluten, by many cases of diabetes.

If we find that the urine of a patient suffering from glycosuria contains amino-acids we must first determine whether these are being derived from the food alone or come from the tissues as well, and if the former, whether he is still able to metabolise vegetable and egg proteins satisfactorily. Should the exclusion of animal proteins of all kinds from the diet result in a disappearance of the amino-acids, as it does in most gouty individuals, the prognosis is hopeful, and it is probable that by carefully regulating the diet, especially with regard to the kind and amount of protein taken, we shall be able gradually to improve the metabolic powers and get rid of the glycosuria, or at least prevents its increase. If, on the other hand, the exclusion of animal protein does not bring about a disappearance of the amino-acids, it may be concluded that the case is one in which there are serious secondary disturbances of metabolism, and that, although the life of the patient may be prolonged for a considerable time if a carefully arranged system of dieting is adopted, the condition is likely to grow worse and ultimately prove fatal. Much may be done even for patients whose condition appears to be almost hopeless if the diet is controlled by thorough and regular analyses of the urine. I have several patients under my care at the present time who have been told by physicians whom they had consulted two, and in one instance three, years ago that they had not many months to live in all probability, but they are still alive and comparatively well. The improvement in their condition has been brought about by a careful adjustment of the diet to their metabolic capacity, and a regulation of the protein and fat intake as well as the amount of carbohydrate consumed. In one of these cases the patient gained 23 pounds in weight in the first five months, and in another 28 pounds in six months, after the diet was rearranged. Others have also put on flesh, but not to such a marked degree. I am strongly of opinion that the common policy of allowing patients with glycosuria an unlimited amount of meat is pernicious in all cases, for even when no amino-acids are being excreted in the urine, and it is evident that they are being utilised by the organism, we should remember the high specific dynamic effect of protein foods, and bear in mind that it has been proved experimentally that a purely protein diet stimulates metabolism 40 per cent. over the fasting standard, as compared with 6 per cent. for carbohydrates and 14 per cent. for fats. A highly protein diet throws work that should be avoided if possible on an already defective organism, and its continuance tends to strain what powers remain to breaking point, with the result that sooner or later amino-acid metabolism fails in most cases, and the third or "true diabetic" stage is reached. The more I see of diabetes the more firmly am I

[9] Journal of Biological Chemistry, 1912, xi., xii.

convinced that the diet of even the mildest cases of glycosuria should be regulated by careful and complete urinary analyses and be so adjusted that no avoidable strain is thrown upon the metabolic powers of the patient in any direction. The appearance of amino-acids in the urine in recognisable amounts is usually a sign that too much protein food is being taken, just as the presence of sugar is an indication that more carbohydrate is being consumed than the patient can deal with efficiently. Their persistent increase, in spite of careful dieting, is of bad prognostic significance, but a steady diminution following a regulation of the protein intake suggests that, with care, the life of the patient may be prolonged for months or even years.

Nottingham-place, W.

THE MORTALITY OF CHILDREN FROM BURNING.

BY WILLIAM A. BREND, M.A. CAMB., M.B., B.SC. LOND.,
LECTURER ON FORENSIC MEDICINE, CHARING CROSS HOSPITAL.

THE deaths here examined are those of infants and children from burning caused by ignition of clothing, lamp accidents, and, in the words of the Registrar-General, "otherwise or not stated how," the great bulk of which may be assumed to have been due to the catching fire of clothing. The following are the actual figures for the years 1906 to 1911:—

Ages.	Boys.	Girls.	Ages.	Boys.	Girls.
0 to 1	214	234	4 to 5	368	775
1 „ 2	443	466	5 „ 10	389	1427
2 „ 3	840	623	10 „ 15	47	369
3 „ 4	580	729	15 „ 20	33	261

In the subjoined chart a small correction has been made for the slightly greater number of boys at the earlier ages than girls. It will be seen that there is a very marked difference between the mortality of boys and girls. In the case of boys the figures increase rapidly up to the age of 3, drop nearly as quickly to the age of 6, and then gradually fall away to almost nothing. The mortality of girls continues to increase up to the age of 5, and then declines, though to not nearly the same extent as among boys. It remains higher through the ages of adolescence, being between the ages of 15 and 20 about eight times as great.

This remarkable difference in the mortality is probably due to the difference in the style of clothing worn by the two sexes. Up to about the age of 3 boys are dressed in the same way as girls. From 3 to 4 they are put into male attire and there is an abrupt and marked fall in the mortality from burning. With girls it is not until the age is reached at which they are better able to take care of themselves that the figures show a decline, though even then, and for later years, they remain much higher than those relating to boys.

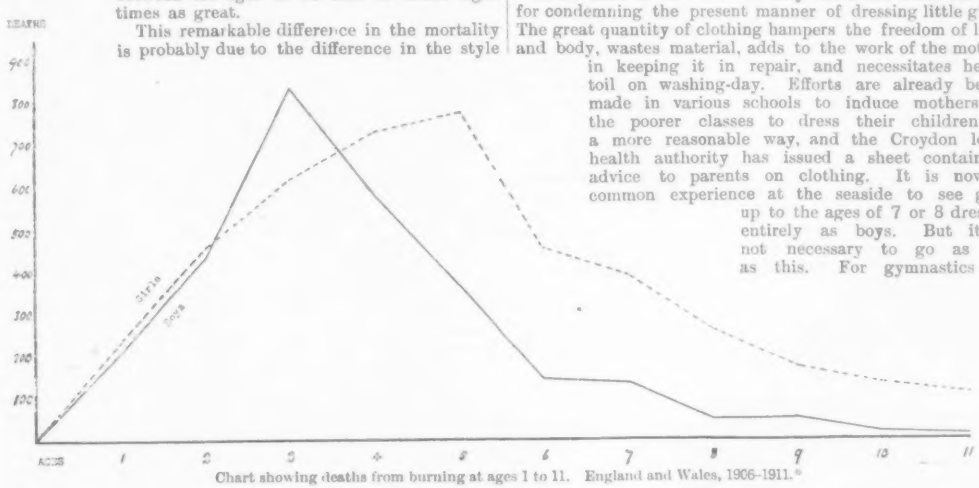


Chart showing deaths from burning at ages 1 to 11. England and Wales, 1906–1911.*

Miss Synge, in her admirable book on children's clothing, has recently drawn attention to the excessive number of garments worn by children of the poorer classes. Speaking of her experience in schools she writes: "The quantity of material used on the children was pitiful. Early Victorian patterns were for the most part used, and underneath the pleats and gathers the children looked swollen and shapeless. ..... The girls are the worst off. First they wear a thick vest and bunchy flannelette chemise. Flannelette drawers over or under some sort of stays—often boned—follow. Then two or three petticoats gathered or pleated into a waistband, or more often attached to a body or two bodies, not infrequently three bodies, of varying sizes. Over this is a bunchy frock, often kilted, and a pinafore. The garments are of varying sizes, some much too tight, some too large, and there is little freedom of limb such as we would see."

Probably no more inflammable arrangement than this, consisting of layers of flimsy material separated by air, could be devised. The corner of a pinafore has only to become ignited and in a moment the little victim is a mass of flames. On the other hand, the inflammabilit of a boy's costume consisting of cloth knickers and jersey or coat is far less.

Considerable agitation has been directed against the use of flannelette, which is very largely worn, and undoubtedly the cheapest varieties are to be avoided. But this material is inexpensive, and it would probably be difficult to substitute anything for it among the poor. The foregoing figures show that it is not so much the material as the style of clothing which leads to loss of life, and probably any other light material used in the present fashion would be almost as dangerous.

The reason for the higher mortality of boys as compared with girls between 2 and 3 is not quite clear, but it may be due to boys at this age being rather more vigorous and enterprising than girls, and more frequently getting into positions of danger. It might be suggested that the higher mortality among girls at later ages is partly due to their being kept more at home and engaged in culinary work. But against this must be set the greater tendency of boys to play with matches or fire.

In addition to its inflammability there are other reasons for condemning the present manner of dressing little girls. The great quantity of clothing hampers the freedom of limb and body, wastes material, adds to the work of the mother in keeping it in repair, and necessitates heavy toil on washing-day. Efforts are already being made in various schools to induce mothers of the poorer classes to dress their children in a more reasonable way, and the Croydon local health authority has issued a sheet containing advice to parents on clothing. It is now a common experience at the seaside to see girls up to the ages of 7 or 8 dressed entirely as boys. But it is not necessary to go as far as this. For gymnastics or drilling a costume is now worn in many schools consisting of navy serge knickers and a short tunic or jersey and plain serge skirt. This costume is becoming, serviceable, and hygienic, and does not subject the wearers to the risk of injury or death in one of its most terrible forms. These are strong reasons for encouraging its use among the poorer classes in every way possible.

* I am indebted to the Registrar-General for the details of figures for the ages 5 to 11.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF PSYCHIATRY.

Pellagra with Insanity.—What is Insanity?

A MEETING of this section was held on Oct. 28th, Sir GEORGE SAVAGE, the President, being in the chair.

Dr. J. W. E. COLE demonstrated a case of Pellagra with Insanity.[1] The patient was a woman who three days after admission to a mental hospital developed an erythema on the bridge of the nose, and this rapidly spread over certain parts of the face. Three weeks later the affected area was covered with a dry, yellowish-brown stain. The scaly surface had a clearly defined red margin, was very symmetrical in distribution, and resembled in every respect a case of severe sunburn. The backs of the hands were deeply pigmented and the epidermis was very rough and coarse. She had a dysenteric form of diarrhœa, but no stomatitis. Her reflexes were definitely exaggerated, but ankle clonus was absent. Her mental condition was difficult to distinguish from dementia præcox. The rash was now disappearing, and with it the mentality was improving. She had been in the asylum, on and off, four years, but the rash had not previously appeared.

Dr. CHARLES A. MERCIER read a paper entitled "What is Insanity?" He said there existed a vague notion of what was meant by insanity, but the fact that this notion had not been satisfactorily reduced to words showed that the concept was unprecise. Insanity and unsoundness of mind were not convertible terms. Each included much which was not in the other; in fact, the two things coincided for only part of the way. Insanity was a disorder not only of mind but of conduct; giddiness, epileptic auræ, claustrophobia, and agoraphobia had nothing to do with insanity. No one dare call a man insane until he had examined his conduct and found it disordered. And in speaking of disorder of conduct he did not mean "disorderly conduct" in the police court sense. But disorder of brain function might be added to the concept, making it a threefold matter; also disorder of metabolism deserved a place, making it fourfold. Each of these concepts was right in its own connexion; confusion ensued from giving all the concepts the same name. If insanity meant disorder of conduct and mind alone, then insanity was a symptom of disorder of brain function. If insanity meant disorder of conduct and mind *plus* disorder of brain function, and if these three were correlated disorders from which the patient suffered, then the three disorders constituted the disease insanity. But if these three were correlated with some wider disorder, such as alcoholic poisoning, myxœdema, gout, specific fever, Graves's disease, this threefold disorder was a sub-disease of the wider disease. When insanity was a symptom only he argued that it was expedient to speak of it as delirium, reserving the name "insanity" for cases in which what was meant by it was a disease.

The paper was discussed by the PRESIDENT, Mr. JAMES STEWART, Dr. PERCY SMITH, Dr. ERNEST JONES, and Dr. E. S. PASMORE, and Dr. MERCIER replied, elaborating his thesis still further.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

Chronic Abdominal Pain.

A MEETING of this society was held at the Royal Devon and Exeter Hospital on Oct. 10th, Dr. C. J. VLIELAND, the President, being in the chair. In response to an invitation from the council of the society an address was given by Mr. T. CRISP ENGLISH, who had chosen for his subject "Chronic Abdominal Pain." Mr. Crisp English dealt mainly with the cases in which the cause of the pain was not at first obvious, and in which the question of a laparotomy usually arose. He said that these cases were becoming increasingly common, both in private and in hospital practice. The private patient who had had attacks of pain for some time, in spite of various forms of medical treatment, was sooner or later sent to the surgeon for an opinion; hospital patients were constantly arriving with notes saying that the bearers had had a chronic pain and advising that they should be opened. There was no group of cases in which good sound judgment and common sense were more needed. On the one hand, many patients might be saved years of chronic abdominal pain and ill-health by operation; on the other hand, many patients had been plunged into hopeless invalidism by an ill-considered laparotomy. Speculative operations frequently led to disaster, and were often the forerunner of further operations upon patients who never seemed to get well and who were always ready to have yet another organ explored or excised; but in most cases of chronic abdominal pain there was a definite organic cause for the pain, which could be removed by operation, and if the effects of the pain justified operative measures, then operation should be advised. The most important point was that a thorough physical examination must be made before the best line of treatment was decided upon. Not until evidence of every possible kind had been collected and summarised should diagnosis and treatment be discussed. In this the surgeon must rely upon the coöperation of the medical practitioner and the physician. In hospital practice the diagnostic process was easily arranged, and the following was the usual procedure, say in the case of a patient who had chronic or recurrent abdominal pain, the cause of which was not at first obvious. The history of the case was carefully taken, and the usual physical examination made. The urine was measured for 24 hours and analysed. If there was any doubt about the kidneys or bladder a bacteriological examination was made, for a coli pyelitis was the cause of some cases of obscure pain in the side. Skiagrams were then taken, either of the urinary tract to exclude stone, or of the alimentary tract after the ingestion of a bismuth meal. The patient was referred to the physician in many cases; in doubtful stomach cases a test meal was given and the result analysed. In certain other cases also special investigations were carried out, such as examination with the sigmoidoscope or cystoscope or a blood examination. Further, there might be a difficulty in properly examining the abdomen or pelvis, and an examination must be made under an anæsthetic. There should always be clear definite reason for an examination under an anæsthetic, and it should never be done on the off-chance that something might turn up which could not be discovered without it. The various reports and analyses were brought together after three or four days and these clinical findings were considered as a whole. In this way the diagnosis and treatment could be discussed under the best possible circumstances. Wealthy patients might also have a thorough investigation, but the man of moderate means often could not enjoy the advantages open to the rich and poor, and in his case the question of expense very often meant a limited investigation; this was obviously a matter which urgently needed reform. In taking the history of the illness, the important point was to be quite clear as to the very beginning of the illness: when was the patient last in quite normal health? what was the very first symptom he noticed? The initial symptoms should be gone into carefully and fully, and these would often suggest a clue which could not be picked up in the latter part of the history. The examination of the abdomen should never be hurried. They should look and think before they felt, especially in children. The well-known picture of "The Doctor," by Sir Luke Fildes, expressed perfectly what should be the attitude of the medical man towards the sick child: watching and thinking, and realising that much might be learned whilst the child slept. Skiagrams of the alimentary tract might give very valuable information, but one must confess that in the bulk of cases of chronic abdominal pain they were apt to be disappointing. A great deal had yet to be learned about the meaning of the skiagraphic appearances. Deductions made from skiagrams were often falsified when the abdomen was opened, and skiagrams should only be considered in conjunction with other means of investigation. In reviewing the cases of abdominal pain one noticed at once that there were certain well-marked types and groups. There was the gastric group of cases; there were the men with pain in the right upper abdomen; there were the women with pain in the right side; there were those with suspected appendices; there were the elderly, who might have

[1] THE LANCET, Sept. 6th, 1913, p. 717.

malignant disease; there was that big distressing group of cases whose trouble and often never ended was colitis; and, of course, there were the children in a well-marked group of their own. As regards the gastric group, an important point to remember was that the surgeon should be very wary of exploring the stomach of a patient who did not vomit, however large and splashy the stomach might be, and whatever the skiagrams appeared to show. If, however, there was any suspicion of malignancy, that patient must not be left until the matter was cleared up. Chemical examination of the stomach contents would usually give definite information. Concerning the women with pain in the right side, there were certain points well worth bearing in mind. Gall-stones were unlikely to be present unless there was pain in the back; 20 per cent. of women had some degree of mobility of the right kidney; if a patient was told that she had a movable kidney she would never forget this fact. Trusses and pads applied in the hopes of supporting a mobile kidney often pressed injuriously on the cæcum, damaged the appendix, and so produced a new cause of abdominal pain. One of the greatest harms that could be done to a patient was to tell her that the pain was connected with the ovary; such a statement had often started a condition of chronic introspection, leading to mental and bodily ill-health. In the large group of cases in which the appendix was suspected there were two quite distinct classes. Firstly, these were the cases in which there were mild recurrent attacks of pain and uneasiness, which might be due to slight inflammation of the appendix; and secondly, there were those in which there was chronic inflammation of the appendix producing constant uneasiness in the abdomen and general ill-health. The two conditions might be combined, but the difference between them must be clearly remembered. In the former, if a diagnosis was made of mild attacks of appendicitis, the only wise plan was to have the appendix removed unless there was some good reason to the contrary. He did not suppose that many would dispute this statement nowadays. Under modern conditions the risk of appendicectomy was a long way below a half or even a quarter per cent.; on the other hand, a diseased appendix was a dangerous possession. Definite localised tenderness, especially after the pain had passed off, was usually the sign which clinched the diagnosis, and the man who had pain to-day and tenderness in the right iliac fossa to-morrow had a diseased appendix. Chronic appendicitis was the greatest surgical discovery of recent years, but the disease was surrounded by a host of base imitations, and the surgeon must pick his way carefully when dealing with this subject. No patients were more satisfactory or more grateful than those who had had a chronic diseased appendix removed. The subject of chronic appendicitis had usually been out of health for some time; he was a man who ought to be well and healthy but was not. In a well-marked case the digestion was disordered; pain and distension followed the taking of food; the action of the bowels was erratic, usually constipation with bouts of diarrhœa; tongue furred and breath unpleasant. The abdominal unrest reacted on the general health, which soon suffered. In such a case, if definite evidence of trouble about the appendix was found, a diagnosis might be made of chronic appendicitis, and operation would assuredly restore the patient to good health and enjoyment of life. The full benefit of operation was not always apparent at once and careful after-treatment was essential, but the ultimate results were excellent. The colitis group of cases presented great difficulties. The majority of the patients, unfortunately, could get no help from surgery. For many of them, in fact, the worst thing that could happen was that they should be operated upon. But there was a definite group in which the trouble was associated with an infected appendix. There was no doubt that in certain cases the appendix was the primary focus of infection, and the patient could not be got well by medical means until after the appendix had been removed. The most careful judgment was necessary, for removal of a diseased appendix might be essential to a cure, whilst, if the appendix was normal, the removal of the appendix was likely to do harm. If operation should be decided upon, one point was of great importance: never lead the patient to suppose that removal of the appendix would see the end of all her troubles; operation must be regarded as a preliminary step in a complete scheme of treatment. In children the great majority of cases of abdominal pain were due either to disease of the appendix or to tuberculosis of the lymphatic glands. One of the most striking revelations of abdominal surgery was the frequency of glandular disease in the mesentery. It was a most unfortunate thing for the children of this country that the overcrowded programmes of the Parliamentary sessions prevented the passage of Bills for the control of milk-supply and the inspection of dairies. One of the results was the frequency of abdominal tuberculosis. Chronic appendicitis in children was a very definite disease, and Mr. Crisp English believed was at least as common as acute appendicitis. The text-books contained a scanty reference to this chronic condition, for it was only in the last two or three years that it had emerged from the obscurity of the intestinal disorders of childhood. In the earlier days of appendicitis there was a disinclination to operate upon children in the quiescent stage, unless there had been at least one definite and severe attack. Later clinical observation showed that some of the children with disordered abdomens and unsatisfactory health had, from time to time, attacks of pain and tenderness about the appendix. Removal of the appendix brought about a remarkable improvement in the general health, and so it gradually became clear that these children had been suffering, and suffering very decidedly, from chronic appendicitis. As time had gone by the improvement had been maintained. The children operated upon three or four years ago had never turned back. This was convincing that the appendix was beyond all doubt the cause of ill-health. Once the medical man felt sure about the diagnosis he should advise operation, and this for two reasons. One was that the child would not get well until the appendix was out, and the other was the ever-present risk of an acute attack. Acute appendicitis was one of the worst catastrophes that could befall a child, and once a child's appendix had shown signs of inflammation it should come out. Remove the appendix and the health would at once improve; good spirits and appetite were regained, and the child was once more what Nature meant that child to be.

At the conclusion of his address a hearty vote of thanks was given to Mr. Crisp English on a proposal by Dr. D. W. SAMWAYS, seconded by Mr. RUSSELL COOMBE.

Mr. Crisp English was subsequently the guest of the society at the Exeter and South-Western medical dinner.

LIVERPOOL MEDICAL INSTITUTION.

Aseptic Technique of the Anæsthetist.—Enucleation of the Tonsil.—Suppurative Diseases of the Labyrinth.

A MEETING of this society was held on Oct. 23rd, Mr. ROBERT JONES, the President, being in the chair.

Dr. G. F. R. SMITH read a note on the Aseptic Technique of the Anæsthetist, in which he insisted on the preparation of the patient's mouth, on the use of sterilised apparatus—namely, the mask and its cover, the bottle for the anæsthetic, gag, &c. Also the anæsthetist should wear a sterilised overall, cap, mask, and gauntlets.—Mr. R. C. DUN spoke of the advantages of the method, especially in operations on small children, where the anæsthetist was of necessity close to the field of operation.

Mr. THOMAS GUTHRIE read a note on Enucleation of the Tonsil. Referring to the technique of the operation he preferred the guillotine operation, introduced by Sluder in America and Whillis and Pybus in this country, for the great majority of cases. The method, however, failed in a few cases of very adherent tonsil, and in these he employed blunt dissection and a snare. Discussing the indications for the operation Mr. Guthrie expressed the opinion that in cases of pure hypertrophy of the tonsils in children tonsillotomy was still the operation of choice, provided that not more than the capsule and a thin layer of tonsil tissue were left behind. In such cases a tonsillotomy, properly performed, was almost always sufficient, and was a less severe operation than enucleation. Bleeding after the two operations was as a rule about the same in amount, but there was certainly more risk of troublesome hæmorrhage after enucleation than after tonsillotomy. When repeated inflammatory attacks had occurred and the tonsil was grossly diseased, or was forming the portal of entry for glandular or systemic infection,

enucleation was the only scientific and satisfactory operation. Lantern slides and specimens of tonsils and the instruments used were shown.—Dr. W. SANDERSON, Mr. J. BARE, Mr. C. YORKE, Mr. E. M. STOCKDALE, Mr. A. ADAIR DIGHTON, and Mr. W. THELWALL THOMAS took part in the discussion.

Mr. ADAIR DIGHTON read a paper on Observations on the Diagnosis of the Suppurative Diseases of the Labyrinth. After reminding members of the fact that one of them, Dr. Edgar Stevenson, had introduced labyrinthology into England as far back as 1896, Mr. Adair Dighton demonstrated the tests upon a patient by means of the instruments of Brüning. He then took up in detail the various pathological divisions of labyrinthitis, together with the treatment of them. This completed, he went into the differential diagnosis between labyrinthitis, cerebellar abscess, meningitis and tumour of the auditory nerve. To wind up, he was of opinion that no operation, however small, should be undertaken upon the ear without the preliminary application of the functional tests.—Dr. PANTLAND HICK spoke of a case in which he had been associated with Mr. Adair Dighton where a successful differential diagnosis of cerebellar abscess had been made by the Brüning tests.—Dr. W. B. WARRINGTON said that whilst the nervous mechanism of the vestibular nerve and its relationships to the Deiters group of cells and oculomotor muscles were clearly known, the manner in which different kinds of stimuli excited the several semicircular canals and so caused nystagmus in different directions was difficult to follow, so as to be able to apply readily in practical work. Further simplification of the technique was desirable, especially when it was necessary to examine persons who were ill with intracranial complications. Dr. Warrington alluded to the rarity of cerebellar abscess compared with suppurative disease of the labyrinth, and urged the importance of diagnosis *inter operationem*.—Mr. STOCKDALE said that suppurative middle-ear disease attacked the labyrinth in two positions: (1) the region of the promontory; and (2) the external semicircular canal in the region of the antro-tympanic passage. Total deafness on the affected side would suggest invasion in the cochlear region, and if the auditory apparatus was intact the application of the caloric test would decide whether the semicircular apparatus were active or not. If an erosion of the external canal was found during operation it was usually advisable not to interfere with it. The radical mastoid operation on rare occasions was performed on patients suffering from meningitis. A preliminary lumbar puncture was most helpful in doubtful cases. Deaths from meningitis following a radical mastoid operation and due to lighting up a latent labyrinthitis, although it might occur, was extremely rare.—Dr. EDGAR STEVENSON and Mr. HUGH E. JONES also spoke, and Mr. ADAIR DIGHTON replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

The Need for Eugenic Reform.

A JOINT meeting of this society and the Edinburgh Obstetrical Society was held in the hall of the Royal Victoria Dispensary on Oct. 29th to hear an address by Major LEONARD DARWIN, President of the Eugenics Education Society, on "The Need for Eugenic Reform." In introducing the subject Major Darwin said that Linnæus, writing in the middle of the eighteenth century, declared that species were now as numerous as when Providence first created them in the beginning, and that, in accordance with the laws of generation then laid down, the beings originally created produced only forms similar to themselves, with the result that the species now with us were no more numerous than they were at the first. In writing this, this great naturalist was only expressing his belief in the immutability of the different forms of life almost universally held in all civilised countries until the middle of last century. It was true that the suggestion that the world was the outcome of a long series of continuous changes had been made by several philosophers in ancient days; whilst from time to time some more advanced thinker would express the belief that every animal, including man, was the lineal descendant of some more primitive type of living thing. But those who held such views were always so few in number that the general acceptance of their beliefs could only be described as a complete revolution in thought. But must not the adoption of the belief that by evolution alone could we account for the visible facts of life tend to produce material alterations in the way in which we regarded many practical questions? The truth was that it was quite impossible for us to go on acting as if we held precisely the same beliefs as our ancestors, and the aim of the eugenist was both to guide and to hasten the reforms in social customs and in legislation which must in any case result from the acceptance of the doctrine of evolution. Anyone who studied our Poor-law statistics or who looked at our ever-growing lunatic asylums, homes for imbeciles, and hospitals, or who considered our criminal records, or who merely took a single walk in our city slums, must feel profoundly dissatisfied with the existing social conditions of his country. Splendid efforts were no doubt being made on all sides, but when we remembered how long this noble strife had lasted we were absolutely driven to inquire whether some other and hitherto untried methods were not also essential to secure the progress of the nation, or indeed to safeguard it from decadence. If, as Major Darwin held, it would be necessary to continue in the future, as in the past, to try to alleviate or mitigate the sufferings of our fellow creatures by the application of immediate remedies, it would be absolutely incumbent to recognise the necessity of searching for the ultimate sources of all these evils. In the past the efforts of the social reformer had been almost entirely directed to conferring immediate practical benefits on man by altering his mental and physical surroundings. We must, however, also in the future endeavour to ensure that our descendants shall actually enter the world with a better natural equipment than that which we possess. As long as complete ignorance prevailed as to the way in which the generations of man succeeded each other, it was inevitable that all philanthropic efforts to help the human being should have begun at his birth. Now that this ignorance was being dissipated we were bound to see if something could not be accomplished before his birth, and that was the aim of the eugenists. They held that the world was so constituted that all the good qualities of man, as well as all his evil tendencies, had been evolved in accordance with what were called the laws of nature. Their hope and belief was that by studying these laws we should now be able to take steps tending to ensure that the man of the future should be a far nobler being than the man of to-day. Major Darwin said that eugenists were not yet in a position to formulate a policy with great precision. They, however, saw clearly that the selection of the ancestry of the coming generations had been one of nature's main methods of ensuring racial advancement. Nature had always paid the closest attention to heredity, and this study was imperatively imposed on them. It was essential to adopt reforms based on heredity. The breeders of race-horses did not quarrel as to which was the more important for their horses, good training or good pedigree; and the breeders of mankind should not wrangle as to which was the more important, environment or heredity. There was much for eugenists to do, and he rejoiced that a eugenic society was likely to be formed in the capital of Scotland. Galton's definition of the science was that it included "the study of the agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." The evil effects of alcohol on the drinker and his family were unquestionable, but how the distant descendants would be affected was unknown. As to the campaign against drink and disease, the eugenist should take part in it. The same was true with regard to environmental reforms, such as better housing and sanitation. But pending further knowledge as to the ultimate effects of all such reforms, if they wanted to ensure the progress of the race they must not confine their efforts to the cure of these evils, but must also consider the factor of heredity, which was the key by means of which the door leading to the future advancement of mankind could be unlocked. Their main object should be to decrease the rate of multiplication in the lower strata of humanity relatively to that in the higher strata. The poorest classes contained many individuals both very virtuous and very capable, whilst amongst the rich many most undesirable specimens were found. A sorting process was always going on, the naturally able amongst the poor often acquiring greater wealth, whilst many of the naturally deficient

amongst the rich slowly sank from their more comfortable estate. The poorest strata did contain an exceptionally large proportion of the biologically unfit, but also had an exceptionally high birth-rate. If this meant that the unfit were multiplying more quickly than the fit, the nation was decadent. Speaking of the remedies for the relatively low rate of multiplication of the more capable classes, he suggested the income-tax being made to vary according to the size of the family, and death duties also. The pay of State employees might be made partly dependent on the number of their children. Such expedients would touch but few, and their main hope must rest on changing the mental attitude of the whole nation with regard to the duties owed to posterity. As to the high fertility of the very unfit, little could be done to check it by moral persuasion. A class did exist, out of which a vast output of undesirable citizens was taking place, which could only be dealt with by sterilisation or segregation. As to the former, he would only say it was a question to be approached with the utmost caution and in a very conservative spirit. They should watch what was taking place in America. As to segregation, this was in the region of practical politics since the passing of the Mental Deficiency Bill, which his society had no hesitation in placing in the forefront of their programme. But besides the feeble-minded other classes of degenerates—e.g., criminals and paupers—ought to have the rate of their multiplication diminished. Habitual criminals and paupers judged to be truly degenerate should be dealt with, not as needing punishment, but as requiring protection against themselves or for safeguarding the public from present injury and future hereditary taint. Their periods of confinement should never be short. Such a system would reduce the output of defectives, and this was all they could hope to do at present. In strengthening the scientific foundations of eugenics much remained to be done. A moral superstructure required to be erected, and here he was convinced their greatest difficulties would arise. Their main object must be to sow broadcast throughout the nation a deep and impelling sense of our obligation towards posterity. Eugenic education societies might be founded in various places, for everyone who enrolled himself was quite unconsciously induced to become an advocate in their favour in general conversation. At Liverpool certain members of the council of the local Eugenic Society had done excellent service in giving elementary lectures in eugenics at various institutions, and, again, help was needed in making the best use of the local press, and lastly, special efforts should be made to interest teachers in schools in their cause. If the eugenic ideal could be properly planted in the minds of all children, not only would the effect be immediately ennobling, but good fruit would in time grow out of this seed by the men and women of the future. In concluding, Major Darwin said that it was not only the help of the scientist and the moralist that they needed, but every class was required to fight against national degeneracy. If it were only more widely known how enormous was the burden thrown on the community by the vast number of degenerates the need for reform would be better understood. Increased taxation, lowered wages, increased prices, diminished aid in time of trouble, and lessened power of competition in time of peace, these were the penalties we were now paying for the carelessness of our ancestors with regard to the purity of our race. Should we pass on this taint with undiminished intensity to posterity? If they could make the facts on which their creed was built more widely known, he was certain they would only have to appeal to their fellow countrymen to attract sufficient recruits to make the success of their cause a certainty.

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enucleation was the only scientific and satisfactory operation. Lantern slides and specimens of tonsils and the instruments used were shown.—Dr. W. SANDERSON, Mr. J. BARK, Mr. C. YORKE, Mr. E. M. STOCKDALE, Mr. A. ADAIR DIGHTON, and Mr. W. THELWALL THOMAS took part in the discussion.

Mr. ADAIR DIGHTON read a paper on Observations on the Diagnosis of the Suppurative Diseases of the Labyrinth. After reminding members of the fact that one of them, Dr. Edgar Stevenson, had introduced labyrinthology into England as far back as 1896, Mr. Adair Dighton demonstrated the tests upon a patient by means of the instruments of Brüning. He then took up in detail the various pathological divisions of labyrinthitis, together with the treatment of them. This completed, he went into the differential diagnosis between labyrinthitis, cerebellar abscess, meningitis and tumour of the auditory nerve. To wind up, he was of opinion that no operation, however small, should be undertaken upon the ear without the preliminary application of the functional tests.—Dr. PANTLAND HICK spoke of a case in which he had been associated with Mr. Adair Dighton where a successful differential diagnosis of cerebellar abscess had been made by the Brüning tests.—Dr. W. B. WARRINGTON said that whilst the nervous mechanism of the vestibular nerve and its relationships to the Deiters group of cells and oculo-motor muscles were clearly known, the manner in which different kinds of stimuli excited the several semi-circular canals and so caused nystagmus in different directions was difficult to follow, so as to be able to apply readily in practical work. Further simplification of the technique was desirable, especially when it was necessary to examine persons who were ill with intracranial complications. Dr. Warrington alluded to the rarity of cerebellar abscess compared with suppurative disease of the labyrinth, and urged the importance of diagnosis *inter operationem*.—Mr. STOCKDALE said that suppurative middle-ear disease attacked the labyrinth in two positions: (1) the region of the promontory; and (2) the external semicircular canal in the region of the antro-tympanic passage. Total deafness on the affected side would suggest invasion in the cochlear region, and if the auditory apparatus was intact the application of the caloric test would decide whether the semicircular apparatus were active or not. If an erosion of the external canal was found during operation it was usually advisable not to interfere with it. The radical mastoid operation on rare occasions was performed on patients suffering from meningitis. A preliminary lumbar puncture was most helpful in doubtful cases. Deaths from meningitis following a radical mastoid operation and due to lighting up a latent labyrinthitis, although it might occur, was extremely rare.—Dr. EDGAR STEVENSON and Mr. HUGH E. JONES also spoke, and Mr. ADAIR DIGHTON replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

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Reviews and Notices of Books.

Die Rassenhygiene in den Vereinigten Staaten von Nordamerika. By GÉZA VON HOFFMANN. Munich: J. F. Lehmann. 1913. Pp. xxi.–237. Price 4 marks.

State Laws Limiting Marriage Selection, Examined in the Light of Eugenics. By CHARLES B. DAVENPORT. Long Island, N.Y.: Eugenics Record Office. Bulletin No. 9. Pp. 66. 1913. Price 40 cents.

As is well known, America is the country where experiments in legislation for eugenic and other social purposes have been chiefly made, but hitherto there have been no convenient handbooks to which one could refer if in quest of information on the subject. This want has now been supplied by Herr von Hoffmann, who, as the Austrian vice-consul in California, was in a favourable position for collecting the necessary information. But he has not confined himself to a description of the legislative enactments of the Union or of the various States. He has also taken pains to master, as much as possible, what has been said and written for and against them, whether they deal with sterilisation, limitations in marriage, or the selection of immigrants, and with regard to each question involved he has made a clear summary of the *pros* and *cons*. Also to make his book more useful to persons quite unfamiliar with the subject, he begins with a chapter on the principles of race hygiene, but it is questionable whether his treatment of such subjects as the germ-plasm and Mendel's laws is not altogether too brief to be intelligible to a beginner. English readers in any case will have little use for it. More valuable is the next chapter, which describes the agencies concerned in the spread of eugenic ideas in the United States; but perhaps the most useful feature of the whole book is the bibliography which occupies the last 80 pages.

Dr. Davenport's work is of an entirely different nature; its most valuable part is the appendix, which contains a digest of the State laws limiting marriage selection. Their examination in the light of eugenics will hardly serve as a guide for future legislation on the subject, as the method adopted is the simple enumeration of the results of the various kinds of matings which are prohibited in one place or another. For example, with regard to incest between brother and sister, two cases are recorded: 1. "Hannah, about whom nothing is known (except that she has the reputation of not having good sense) had by her brother William, of whom also nothing is known (except that he was a painter) a son ..... of whom someone said he is 'very feeble-minded,' while others have said he is not so bad considering." 2. "The father is feeble-minded—son of an alcoholic criminal. By his sister, who is mentally defective, he had a daughter who is epileptic, alcoholic criminalistic, and without sex control."

What light these two cases throw on the question whether brother and sister marriages are biologically desirable or not, or what use at all it is to discuss the question, it is difficult to see; nor is it easier to follow how by recording the following solitary case any help is given in deciding whether great-uncles and nieces should be allowed to marry. The case is that "Emily R., when 13 years old, was married, for a monetary consideration, to her father's father's brother, who was then 51 years of age. They had three children, of whom the eldest was sexually immoral and died of paresis at 42 years; one boy was 'not bright,' and was drowned at 18 years; the youngest boy died at 2 years."

It must be said in fairness to Dr. Davenport that the treatment of the more urgent question of cousin marriages is far more satisfactory, though the conclusion here arrived at is also based merely on quite a few selected marriages; these are arranged to show that desirable results ensue when the husband and wife sprang from a desirable strain, and that the reverse is the case when the stock is tainted.

Protein and Nutrition: An Investigation. By Dr. M. HINDHEDE. London: Ewart, Seymour, and Co., Limited. Pp. 201. Price 7*s.* 6*d.* net.

THERE is no date on the title-page and the preface is dated 1913, but in that preface it is admitted that the bulk of the present volume was written in Danish in 1905. The author is superintendent of a State laboratory in Copenhagen, where the practical data contained in the book have been worked out, with the coöperation of five assistants. The author admits in his preface that the book is somewhat polemical in character, an admission which will be readily endorsed by every reader.

The volume claims to be an examination of such authorities on dietetics as Voigt, Hirschfeld, Chittenden, and McKay, and the work of each is surveyed in separate chapters. Towards all these investigators, well known to the whole world for their patient efforts in experimental physiology, Dr. Hindhede adopts an attitude of criticism which would carry greater conviction if it were less confused and more controlled. Copious references are given in footnotes, but their value is seriously lessened by the almost complete absence of dates. When we find that some of the literature referred to dates back to 1879, and is alluded to side by side with the results of quite recent work, it is evident that no attempt at sustained analysis is being made. The author singles out Professor McKay for special attack, accusing him of "confusion" of thought, but he has clearly not studied Professor McKay's complete work published in 1912, which embodied the various papers, admittedly tentative, from which the matter is taken for discussion in the volume before us.

The author's own experiments on himself and his laboratory assistants have been on too small a scale to carry much weight, and, like so many of these experiments, they are carried out on selected subjects, losing sight of the possibility that in a population of varying physique, and varying hygienic surroundings, a mixed dietary may be of value.

Physical Diagnosis. By RICHARD C. CABOT, M.D., Assistant Professor of Medicine in Harvard University. Fifth edition, revised and enlarged, with 5 plates and 268 figures in the text. London: Baillière, Tindall, and Cox. 1913. Pp. 519. Price 15*s.* net.

A THOROUGH and practical knowledge of the methods of physical examination and of the significance of the data obtained by them is essential to the practitioner, as affording him some of the most important material on which to base his diagnosis. Instruction in this subject is, therefore, one of the utmost importance for the student. Dr. Cabot's book, which has now reached its fifth edition, has achieved a recognised position as a standard manual upon the subject. In our reviews of some of the former editions we have referred to the practical and eclectic character of the information given, and these features are maintained in the present one. Dr. Cabot does not describe any method of examination with which he has not had practical experience. He devotes himself to physical examination proper, and deprecates any distinction between clinical diagnosis and laboratory diagnosis. He prefers to consider all the methods together, and advises that the student should be accustomed to think of them and practise them in close relationship to one another. For this reason he includes descriptions of the analysis of the gastric contents, of the blood, and of the urine.

The arrangement of the subject matter is convenient and simply worked out. Data relating to the body as a whole, such as alterations in weight and variations in temperature, are first considered, and then the various regions, systems,

or organs of the body are separately discussed. The information obtainable by percussion and auscultation is very thoroughly described in connexion with the examination of the heart and lungs. Dr. Cabot often gives some valuable statistics in support of the statements he makes. We know of no book in which these methods are more clearly described or in which the significance of the signs obtained by them is more critically discussed.

Among the additions to the present edition we may mention the sections upon arteriograms, phlebograms, and electrocardiograms. Dr. Cabot here only gives a brief *résumé* of the results so far obtained from them, and does not furnish any information as to the methods of obtaining them. He also gives more details in regard to the arrhythmias in the light of recent work upon their nature. In connexion with the examination of the pulse he devotes special attention to the subject of blood pressure and to the instruments for measuring it. The examination of the stomach by means of the X rays after the administration of a bismuth meal is adequately dealt with, and some reproductions of radiograms illustrating the results obtained are given. The subject of interlobar empyema is well described and is illustrated by a very good reproduction of a radiogram of a case observed by Dr. Englebach and Dr. Carman.

The book is well produced and clearly printed. The number of the illustrations has been increased, and their quality has been greatly improved. They now form a valuable addition to the usefulness of the book. We can commend it to students and practitioners as a reliable and interesting work upon an important subject.

Massage, its Principles and Technic. By MAX BÖHM, M.D. Berlin. Edited with an introduction by CHAS. F. PAINTER, M.D., Professor of Orthopædic Surgery at Tufts College Medical School, Boston. Illustrated. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 91. Price 7*s.* 6*d.* net.

IN his introduction the editor states that "physical therapeutics in all its forms is employed far more widely in Germany than in America." It is probably employed far more widely in America than in England. The profession at large are not securing for their patients the benefits that they might, because they do not know enough of the advantages to be gained from massage and exercise to think of making use of such measures, nor are the principles which underly the use of exercises in surgery at all widely appreciated. We are glad, therefore, to see the present large output of books upon this subject. They differ little from each other in their contents, but they all tend to make more widely known the good effects that can be obtained from the skilful application of massage in numerous affections.

We are in entire agreement with Dr. Böhm when he says that in a great many cases, in order to avoid harm, massage should be carried out by the surgeon himself or under his eye; such cases are especially those of inflammatory conditions of muscles, tendons, joints, and nerves, massage of internal organs, the eye, the larynx, &c. But there is unquestionably a large field open to the masseur with no special medical knowledge, as, for instance, when massage is administered to practically sound parts to strengthen them or improve their nutrition. The skilled masseur equipped with a small knowledge of anatomy is fully equal to this task. The book under consideration deals only with the latter class of case. It is intended for the student who desires to assist the surgeon in an intelligent manner in massage and gymnastics. The technique described is essentially that prescribed in Professor Hoffa's clinic. After a description of the preparation of the patient and the fundamental manipulations of massage a few general contra-indications are given, and then follow a systematic description of massage as applied to each of the joints, to the groups of muscles in the trunk and limbs, a chapter on the massage of the nerves and skin, and finally on body massage. Coming from the clinic of Professor Hoffa it is unnecessary to state that the methods described are of the most approved and scientific. The arrangement of the subject is the best that we have seen, in that the contra-indications as applied to each joint are clearly stated at the beginning of each section; then follows an equally clear statement of the indications and the most suitable technique for the joint in question. The illustrations, upon which the book so largely depends for its value to practitioners and those unfamiliar with massage, are clear, simple, and well reproduced.

We can recommend this book, which from its moderate cost and wide usefulness deserves to find a large public in this country.

The Surgery of the Eye. By ERVIN TÖRÖK, M.D., Surgeon to the New York Ophthalmic and Aural Institute, &c.; and GERALD H. GROUT, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute, &c. With 509 original illustrations, 101 in colours and two coloured plates. London: Baillière, Tindall, and Cox. 1913. Pp. 507. Price 18*s.* net.

THIS is in appearance a sumptuous work, with all the superficial attractions of good print and profuse illustrations. Closer acquaintance with the contents, however, proves disappointing. We find that the inflated number of illustrations is largely due to repetition of the same blocks. It is true that these are good—as good as any photographs of operations from nature that we remember to have seen; but photographs from nature are on too small a scale to be satisfactory guides to students, and it is impossible by these means to obtain that sharpness and accuracy of detail which are all-essential in operations upon the eye. The authors appear to have realised this point, for they have added many good diagrams.

With the letterpress we are disappointed. Not that there are many actual errors—we have come across only one bad recommendation, viz., paracentesis of the cornea for acute inflammatory glaucoma (p. 175). The great fault is that the operations are not described in sufficient detail. The book is intended as a treatise on ophthalmic surgery for students and practitioners, and as such it ought to emphasise those minutiæ of technique which are more important in this than in any other branch of surgery. This lack of attention to the small details of every step is the besetting sin of the now numerous text-books on ophthalmic surgery. The great book on this subject yet remains to be written. The authors have used the designations "European" and "American" to distinguish the methods of operating from before and from behind the patient respectively. They are apparently unaware that nearly all English surgeons adopt the so-called "American" method, and that the so-called "European" method is by no means universal on the Continent. Most of the ordinary operations are described and instruments are illustrated.

Statistical Ready Reckoner. By GERARD C. TAYLOR, M.A., M.D. Cantab., D.P.H., Medical Officer of Health of Berkshire. Reading: Bradley and Sons. 1913. Pp. 409. Price 12*s.* 6*d.*

PRESUMABLY this book is intended for the use of junior members of the Public Health Service, or of others whose leisure is so limited as to render such a *vade mecum* serviceable. The value of the set of tables that form the bulk of this volume has been proved by the author, who has used them in calculating the statistical rates required in his own work as county medical officer of health of Berkshire; and

he publishes them with a view of facilitating the arithmetical labour of others similarly circumstanced.

The tables are prefaced by a set of examples showing how the former may be used most expeditiously. These examples appear to be correctly worked out, and the ready reckoner may be serviceable to those who are not familiar with the use of the ordinary logarithmic tables. We have not examined the 400 pages of tables that form the bulk of this volume, but the author affirms that great care has been taken, both in their preparation and in the correction of the proof-sheets, and trusts that no serious errors have been overlooked. The following suggestions are offered to those using the ready reckoner for the first time. In the first column of each page the population numbers in the tables are arranged consecutively, the figures in heavy type printed at the head of the other columns indicating the number of events (births, deaths, &c.) corresponding to the rates per 1000 of the population. In order to keep the volume within convenient limits the populations above 10,000 have not been included; but inasmuch as the rates for any larger populations may be calculated from the tables by merely adjusting the decimal point nothing is sacrificed by this omission.

Abwehrfermente des thierischen Organismus gegen körper-, blutplasma- und zellfremde Stoffe, ihr Nachweis und ihr diagnostische Bedeutung zur Prüfung der Funktion der einzelnen Organe. Von EMIL ABDERHALDEN, Direktor des Physiologischen Institutes der Universität zu Halle a.S. Mit 11 Text-figuren, 1 Tafel. 2. Vermehrte Auflage. Berlin: Julius Springer. 1913. Pp. 199. Price, paper, 5.60 marks; bound, 6.40 marks.

WRITING on June 15th, 1913, the author hopes that the second edition of his work will have as friendly a reception as the first edition. The original title of the work, which was very fully reviewed in THE LANCET of Jan. 4th, 1913, has been changed. The term "Schutzfermente" has been replaced by the title "Abwehrfermente." The illustrations have been increased from 8 to 11, a plate is added to show the arrangement adopted for cooling the polarisation tubes, while the text has been increased from 110 to 199 pages. The literature also has been added to. The text has been thoroughly revised and many additions have been made, but we still could have wished to see the text so set out that the reader could find his way more readily, especially as there is no index. New chapters have been added on the stages in the katabolism of the "Bausteine" of the organism, hermaphroditismus verus, the protective regulations of the animal organism against substances foreign to the blood plasma, preliminary studies on the ferments of normal blood, the formation and sources of protective ferments, anaphylaxy, sero-diagnosis of the functions of organs, the correlation of certain organs. The unity of so-called proteolytic ferments is doubtful. Very full technical descriptions are given of the methods of dialysis adopted and also of the optical methods used by the author. We wish the second edition as rapid a success as its predecessor.

Diseases of the Eye: a Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. DE SCHWEINITZ, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, &c. With 360 illustrations and 7 chromo-lithographic plates. Seventh edition, thoroughly revised. London and Philadelphia: W. B. Saunders Company. Pp. 979. 1913.

THERE is no need for us to reiterate the eulogies with which we have greeted previous editions of this work. It is one of the great standard text-books of the English-speaking medical world, and the new edition serves but to re-establish it more firmly. We think the time has come to alter its *format:* it would be much handier if the pages were rather larger. Its outstanding merit is the abundant reference to all the most valuable contributions to the literature of the subject in recent years, and Dr. de Schweinitz succeeds in incorporating these details without marring the general perspective—no easy task. The new matter comprises paragraphs on Schiötz's tonometer, ophthalmodiaphanoscopy, sporotrichosis, Widmark's conjunctivitis, rosacea keratitis, epithelial dystrophy of the cornea, blue sclerotics, progressive atrophy of the iris layers, exudative retinitis, angiomatosis retinæ, cysts of the retina, blindness from arylarsenates, Siegrist's local anæsthesia, trephining of the sclerotic, Reese's muscle resection operation, and Toti's operation (dacryocystorhinostomia). Vaccine therapy and the indications for the administration of salvarsan receive ample consideration, and special attention has been paid to diseases of septic origin, particularly the more obscure forms of iritis and uveitis. The author's apologies for the shortcomings of his work are sufficiently discounted by the list of editions and reprints which have been found necessary. We can cordially recommend the book as belonging to the small group of the very best text-books on ophthalmology.

LIBRARY TABLE.

Die Fermente und Ihre Wirkungen. Von Professor CARL OPPENHEIMER, Dr. Phil. et Med., Berlin-Grunewald. Band I., vierte völlig umgearbeitete Auflage; und Band II., vierte völlig neubearbeitete Auflage. Nebst einem Sonderkapitel: *Physikalische Chemie der Fermente und Fermentwirkungen.* Von Professor R. O. HERZOG, in Prag. Leipzig: F. C. W. Vogel. 1913. Band I., pp. 485, price, paper 20 marks; bound 21.50 marks. Band II., pp. 1150, price, paper 36 marks, bound 37.50 marks.—The importance of ferments in the great vital processes of the body is now established. They may form, for example, a defence against bacterial invasion and they are concerned in controlling the physiological activities connected with metabolism. The study of ferments is developing very rapidly, and knowledge in regard to these wonderful bodies of the most interesting kind is being accumulated day by day. Biochemistry, indeed, has for its foundations the study of the enzymes and their functions. The ground is well covered in this extensive work upon the subject, the two volumes presenting an exhaustive reference to modern researches. The work is divided into three parts, the first being devoted to the general chemistry and biology of the ferments, the second to the individual ferments, and the third to the chemico-physics of the ferments and the nature of their reaction. This last interesting part is written by Professor R. O. Herzog. The subdivision of these parts into chapters and subsections resolves the enzymes into an excellent system of classification. The references to modern contributions on the subject are very copious, and disclose the fact that no small share of the pioneer work may be allotted to English workers. Prominent among these stand the names of Bayliss and Starling, Vernon, Green, Brown, Morris and Herou, White, Pavy, Plimmer, and O'Sullivan. The real founder of biochemistry, however, was, of course, Pasteur, and a rapid development of his work appeared in the researches of Fischer, Buchner, Kühne, and Chittenden. The history of the enzymes is a most interesting one, and all those who would be conversant with this history, as well as with the medical, chemical, and physical significances of the enzyme in the light of modern research, will consult this work with an obvious gain to their knowledge.

The Further Evolution of Man. By W. HALL CALVERT, M.D. Edin. London: A. C. Fifield. 1913. Pp. 324. Price 5*s.* net.—The first few chapters of this book are devoted to an attack upon the Darwinian hypothesis, in so far as that purports to find in natural selection and the struggle for existence a quasi-mechanical basis for the teleological aspect of evolution. In regard to this part of the book Dr. Calvert frankly admits that it is very largely based upon Paulin's work,[1] particularly Chapters III. and V., which deal with the Cannibal Habit in the Male and Malthusianism and the Law of Population. Darwin, with his usual frankness, admitted that he had been unable to ascertain the precise influences by which the assumed tendency of species to increase beyond the means of subsistence is checked, but in default of evidence concluded that the numbers are kept down mainly by starvation and disease. As against this conclusion, which may be called the bedrock tenet of Darwinism, Paulin claimed to have proved the practical universality among all prolific animals of an instinct prompting the male to devour its mate's offspring if it can obtain access to them within a certain number of days after birth. To Dr. Calvert's exposition of Paulin's theory of male cannibalism as a check to undue increase we have referred in a previous issue,[2] in connexion with Mr. Rodier's suggestion for the utilisation of this instinct as a means of exterminating rats. There can be no doubt of the interest and importance of this theory, as the influence of natural selection in the moulding of species by survival value would be reduced almost to vanishing point, once it were proved that the elimination of the "unfit" by starvation or disease is the exception and not the rule in nature. Darwin's views were admittedly suggested by the work of Malthus, whose alleged "law of population" was destructively criticised by Paulin. Dr. Calvert, in a chapter which reproduces the main facts upon which this criticism is based, asserts that Paulin "has proved that population never tends to outrun the means of subsistence; that population recedes when industry and commerce do, and rises again with a period of commercial prosperity. He has shown that war, pestilence, and famine do not limit population; that, in fact, they act at once automatically as an incentive to an increased birth-rate." These points disposed of, Dr. Calvert passes on to the main object of his book—"to ascertain from observed phenomena what is the path which man must follow, and to forecast as nearly as possible his final goal." It is an ambitious programme, and we are bound to say that we are by no means satisfied that it has been adequately carried out. The view taken is that, through the growth of "altruism," due to the permeation of society by the Christian ideal, there has been initiated a progressive amelioration of the general conditions of life, destined to culminate in a universal *régime* of harmony and happiness. It is a very dubious psychology which draws a hard-and-fast line between "egoism" and "altruism," as if they never coincided or had nothing in common. And, in any case, it is at least as tenable that the economic changes applauded by the author are due to the increased egoism of the many who profit by them, as to the growth of altruism among the few who, in a material sense at least, stand to lose thereby.

The Proceedings of the Optical Convention, 1912. Held at South Kensington, June 19th to 26th, 1912. Vol. II. 1912. London: University of London Press. Price 10*s.* net.—For reasons which need not be entered into now ophthalmologists in general hold aloof from the Optical Convention. Without prejudice to the validity of their position, we cannot but regret the detriment which it entails. It cuts them off in large measure from practical acquaintance with the work of such distinguished physicists as Professor R. T. Glazebrook, Professor Silvanus Thompson, Professor Callandar, Professor Poynting, Professor Schuster, and others too numerous to mention. It is the more necessary, therefore, that ophthalmologists should peruse the published accounts of the proceedings of those especially working at the problems of pure optics. There are many in this volume which will well repay their trouble. They will find Professor Silvanus Thompson's presidential address replete with interesting matter. It is an excellent *résumé* of the history of optics to the present day. We would further especially invite their attention to Messrs. C. C. Paterson and B. P. Dudding's contribution on the Visibility of Point Sources of Light, to Messrs. J. S. Dow and V. H. Mackinney's paper on the Measurement of Light and Illumination, to Dr. F. W. Edridge-Green's new Spectral Colour-mixing Apparatus, Mr. Tomlinson's Scotomagraph, Dr. von Rohr's paper on Aspherical Surfaces for Spectacle Lenses (Gullstrand's cataract lenses), and Messrs. A. C. Jolly and A. J. Bull's communication on the Measurement of Colour. These will suffice to show that the work of the physicist should not be neglected, and they will further afford evidence, if such be needed, that the physicist's *ex cathedrâ* statements require the physiologist's criticism.

Die Halluzination: Ihre Entstehung, ihre Ursachen, und ihre Realität. Von Privatdozent Dr. KURT GOLDSTEIN, in Königsberg. Wiesbaden: J. F. Bergmann. 1913. Pp. 72. Price 2*s.* 3*d.*—Dr. Goldstein has written a useful brochure on the subject of hallucinations. He explains them as due to the abnormal excitability of the particular sense within whose field they occur. Illustrations are given of the various types of hallucination. In this connexion we should have liked to see more investigation of the hallucinations of the muscular sense. The factors concerned in the production of hallucinations are fully dealt with, and there are interesting references to the hallucinations of various figures prominent in the world's history. The paragraphs on the hallucinations of individuals who are mentally normal will repay perusal—a subject on which the Society for Psychical Research made a series of investigations some years ago.

Medical Electricity and Light. By ETTIE SAYER, M.B., B.S. Lond. London: The Scientific Press, Limited. 1913. Pp. 124. Price 3*s.* 6*d.* net.—This is an elementary text-book for nurses, and naturally treats the rather extensive subjects comprised in the title in the shortest and simplest manner. Its main object is to form a guide to nurses so that they may the more intelligently assist the practitioner or specialist for whom they are working. Most forms of treatment and apparatus are described, and the book is fully illustrated, even to the extent of redundancy. It will no doubt be found of real use to those for whom it is intended, but for the professional man it cannot be said to have any value.

Laws (Abstract) and Board Rulings Regulating the Practice of Medicine in the United States and Elsewhere. Twenty-first edition. Chicago: American Medical Association. 1913. Pp. 196. Price 30 cents.—The scope of this extremely useful pamphlet has been increased, so that in addition to Canada and the United States it now contains an abstract of the licensing laws relating to the practice of medicine in all the principal countries in the world. There is also a list of the medical colleges of all countries. It is, of course, most detailed in regard to the conditions for practice in the various States of the United States (each of which has its own regulations, so that a separate licence to practise is necessary for each State). Here it gives under the several States the licensing authority and its *personnel*, the

[1] No Struggle for Existence; No Natural Selection. By George Paulin. Edinburgh: T. T. Clark. 1908.
[2] THE LANCET, Sept. 6th, 1913, p. 779, "Rat Destruction."

dates when examinations are held, the requirements to accompany an application for licence, the standard required of colleges by the State, exemptions, reciprocity of licence with other States, and the definition of the Act as to what constitutes the practice of medicine. The book will prove invaluable to any medical man contemplating practice in the United States, and is serviceable generally as a book of reference to conditions of medical practice throughout the world. Every care has been taken by the Council of Medical Education of the Association to secure the utmost possible accuracy.

MISCELLANEOUS VOLUMES.

PROMPTITUDE in publishing its Transactions is a great virtue in any conference, and we are glad to welcome the *Transactions of the Fifth Annual Conference* (London: Adlard and Son. 1913. Pp. 222. Price 4*s.* 6*d.*, post free 5*s.*) of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, which was held on August 4th and 5th. Owing to its coincidence with the International Medical Congress, which followed immediately after the British Medical Association, we were unable to devote space to a report of the conference, but undoubtedly the chief interest centred in the discussion on tuberculin treatment, and this discussion was fully reviewed in a leading article in our issue of August 23rd, in which Dr. Hector Mackenzie's general survey of the subject also was published, several other papers having been published in previous issues of THE LANCET. The other papers contained in the Transactions discussed various aspects of coördination of antituberculous measures by Sir Robert Philip, Councillor A. Neal, Dr. A. Ransome, Dr. Hermann Biggs, Dr. W. C. White, Dr. E. Rist, Sir Clifford Allbutt, Professor C. Saugman, Sir William J. Thompson, Dr. E. Coey Bigger, Professor W. H. Thompson, and Lewis Courtauld.—The fact that a little pamphlet, entitled *Preventive Hygiene, an Account of the Brussels International Conferences, 1899 and 1902*, by an ENGLISH MEMBER (London: John Bale, Sons, and Danielsson. 1912. Pp. 36. Price 3*d.*). has reached a fourth edition, shows clearly that many have been anxious to learn the results of these two conferences on the prevention of venereal disease, and as the matter is exciting special attention at the present time we may state that this book presents very clearly one aspect of this important subject. It is not bigoted, and it recognises that the question has many sides, so that it should prove of help to those who wish to know the truth about the methods of the prevention of venereal disease and their results.

A number of reference books claim attention. University calendars contain much information of general interest, more especially at the present moment, when reform is in the air and thought is being devoted to educational matters generally, and the purpose and place of examinations in particular.—We have received the *University of London Calendar, 1913–14* (London: Hodder and Stoughton. Price 6*s.* net), which, in addition to the usual information contained in this class of books with regard to curricula, names of members of the various faculties, and so forth, is prefaced by a short history of the University, and includes a coloured map of London showing the constituent colleges and the institutions having teachers recognised by the University.—The *Regulations for External Students* and the *Regulations for Internal Students* (same publishers) are useful and necessary supplements to the University calendar.—*London Matriculation Directory* (London: University Tutorial Press, Limited, price 1*s.* net) gives the questions set at the September examinations, with answers.—*London University Guide* (London: University Correspondence College, published gratis) contains notes on the subjects of the different examinations, with notes on the special subjects, for 1914–15.—*University College (London) Calendar* (London: Taylor and Francis) contains, in addition to the usual information, the examination papers for the session 1912–13.—Other calendars for the new academic year are those of the *University of Durham College of Medicine* (Newcastle-on-Tyne: Andrew Reid and Co., Limited), the *Calendar of the University of Bristol* (to be obtained from the Registrar of the University), and the *Calendar of the National University of Ireland* (also to be obtained from the Registrar). In the last named several changes are announced in the courses and regulations for 1914.—*The Calendar of the Royal College of Surgeons of England* (London: Taylor and Francis, price 1*s.*) has also just been issued. Alterations in the regulations will be found in the annual report of the Council of the College published in THE LANCET of Oct. 18th, p. 1144.

The increasing vigilance of the income-tax authorities is no doubt responsible for the issue of new editions of *Income-Tax Simplified*, by ARTHUR FIELDHOUSE and E. EWART FIELDHOUSE (London: Simpkin, Marshall, and Co., price 1*s.*), and *Guide to the Income-tax*, by F. B. LEEMING (London: Effingham Wilson, price 2*s.* 6*d.*). Both works serve a useful purpose; but we still look for the book—a small one would suffice—specially written to cover the requirements of the average general practitioner.

JOURNALS AND MAGAZINES.

Parasitology. Edited by GEORGE H. F. NUTTALL, F.R.S., and ARTHUR E. SHIPLEY, F.R.S., assisted by EDWARD HINDLE, Ph.D. Vol. VI., No. 3. October, 1913. London: C. F. Clay, Cambridge University Press. Price 10*s.* net; yearly subscription £1 10*s.*—The opening article on the Anatomy of Argas Persicus (Oken, 1818), by L. E. Robinson and J. Davidson, consists of the second part of these authors' exhaustive monograph on the fowl tick. The present part is devoted to an account of the integument, alimentary canal, and the blood vascular, respiratory, and excretory systems, and is profusely illustrated both with diagrams and coloured plates.—The Nuclear Structure and the Sporulation of Agrippina Bona Strickland, by Kenneth R. Lewin, contains an account of the nuclear changes of a gregarine, parasitic in the larva of the rat-flea, Ceratophyllus fasciatus. The various stages in the formation of gametes and the subsequent sporulation are described in detail, and from his account it appears that Agrippina bona does not differ materially from other gregarines in the manner in which the spores are formed.—In an article on Some Peculiar and Probably Specific Bodies in the Erythrocytes in Rinderpest and another Allied Disease, by W. Leonard Braddon, the author describes certain peculiar appearances observed in the blood of animals infected with rinderpest. In order to produce these appearances the blood is mixed with a solution of 1 per cent. potassium citrate and 0·5 per cent. medicinal methylene blue, and of the resulting mixture some specimens are put up under cover-glasses, whilst others are put in watch-glasses exposed to the air but not to light, and arranged as moist chambers. Under these conditions, after periods varying from 6 to 48 hours, peculiar bodies, ranging in shape from dots up to irregular elongate rods projecting from each side of a corpuscle, make their appearance in the red cells of animals infected with rinderpest. These bodies have so far been detected only in the blood of animals suffering from rinderpest or but recently recovered from it; on the other hand, they have never been observed in the blood of normal animals, so that it seems reasonable to assume that they are specifically related to rinderpest,

At the end of the paper Sir William Leishman and Professor Minchin add notes, in which they testify to the accuracy of Dr. Braddon's description of the appearances presented in stained preparations of infected blood, but remark that these bodies do not resemble any bacterial or protozoal parasite hitherto known.—Observations on Mammalian Erythrocytes, by J. Charles Johnson, contains the results of a series of examinations of blood-films of both normal and diseased mammals, undertaken in order to determine whether the appearances described by Braddon could be seen in other animals. The blood corpuscles from various sources never presented anything like his description of the alleged parasite of rinderpest, which tends to support Braddon's view that what he describes is specific to that disease.—Tri-radiate Tænia Crassicollis Rud, by S. O. Yoshida, consists of a short note on the prismatic malformation of this species of tape-worm, occurring in Japan. —Seymour Hadwen contributes a most interesting article on Tick Paralysis in Sheep and Man Following Bites of Dermacentor Venustus, accompanied with notes on the biology of the tick. For some time past complaints had been received from a sheep farmer in British Columbia about a form of paralysis affecting his sheep and occurring annually from late February to early April. Dr. Hadwen has investigated this disease experimentally, and finds that it is a form of paralysis occurring in sheep, man, and probably other animals, and is caused by the bites of Dermacentor venustus, one of the common ticks of Western America. The author was able to reproduce the disease by the bites of adult ticks. The resulting paralysis in lambs was found to develop from six to seven days after the ticks had been placed on the aninmal. "Tick paralysis" is usually of short duration and is benign in character, but occasionally it may persist for long periods and may terminate fatally. The causative agent has not been discovered, and the disease has not been reproduced by inoculation. The most likely hypothesis seems to be that the tick injects a toxin which gives rise to the symptoms, and in this respect it is interesting to note that the ticks usually attach themselves along the backbone of animals. Finally, six cases are mentioned of tick-bites in children being followed by paralysis, in one of which the child died suddenly with symptoms of acute ascending paralysis. After death a large tick was found at the nape of the neck. Photographs are given showing the marked paralysis produced in lambs by the bites of ticks.—Experimental "Tick Paralysis" in the Dog, by Seymour Hadwen and G. H. F. Nuttall, is supplementary to the foregoing paper, and records a positive experiment carried out at the Quick Laboratory, Cambridge, upon a dog experimentally infested with Dermacentor venustus obtained from Canada. A single female tick was placed on this dog and after eight days the animal became paralysed; the symptoms persisted for about five days, after which they subsided and the dog recovered. In addition, guinea-pigs that had been bitten by nymphs and larvæ of Dermacentor venustus were found to die five to seven days later. As the disease is never accompanied by fever and, moreover, cannot be reproduced by inoculations, it seems probable that it is not infective.—The Herter Lecture, III., Piroplasmosis, by George H. F. Nuttall, consists of a useful summary of our knowledge of this important group of diseases, with descriptions of the various parasites and their life-histories, and also methods of treatment and prevention.—Conditions Influencing the Transmission of East Coast Fever, by George H. F. Nuttall and Edward Hindle, comprises a brief account of the effect of certain conditions on the infectivity of ticks infected with Theileria parva. The authors find that infected ticks when feeding on cattle do not produce infection during the first two days, and are still infective after feeding on a rabbit for three days. The partial feeding for two days followed by starvation for 17 days renders them non-infective. Infective ticks were rendered non-infective by exposure to 10° C. for three weeks, but their infectivity was restored by subsequently warming them. The authors suggest that the final development of Theileria parva in the tick, resulting in the latter becoming infective, commences only after the tick has begun to ingest blood.

The Journal of Laryngology, Rhinology, and Otology.—The October issue contains a paper read by Professor E. J. Moure, of Bordeaux, in the Laryngological Section of the recent International Congress of Medicine, on What becomes of Sinuses that have been Operated on? The sinuses referred to are, of course, the accessory sinuses of the nose. Many consider that in order to clear out and eradicate suppuration satisfactorily from a frontal sinus full exposure by destruction of its entire anterior wall, commonly known as Kuhnt's procedure, is indispensable, with the object of bringing the skin into contact with the internal wall of the sinus in such a way as to lead to the complete occlusion of its cavity, whilst Killian has devised an operation going a step further to obtain this apparently indispensable fusion. Professor Moure has long been quite convinced that these different ideas are more theoretical than practical, for he has observed that antra which had been very roomy when first operated upon no longer existed, so to speak, when he had to operate for the second time. The cavities had become filled up with fibrous tissue; even the bony walls had come nearer to one another, so that the sinus, in a measure, had disappeared. This fact—the cicatricial obliteration of the sinuses—at once suggested the question, If sinuses after operation close and fill up, then why perform operations so extensive and disfiguring as those of Kuhnt and Killian? For this reason Professor Moure believes that the Caldwell-Luc operation in the case of the maxillary antrum, and the Ogston-Luc in the case of the frontal sinus, will always be the ideal operations when these suppurating cavities must be dealt with by the external route. This is a matter of capital importance, since it means the reduction to a minimum of deforming and mutilating operations, and lessens the gravity of operative acts which many practitioners hesitate to perform by reason of the unfortunate consequences which they have had at times to deplore.

The British Journal of Inebriety.—The October number publishes in full the excellently practical and thoughtful address on Alcohol and the Child-Bearing Woman, delivered by Mrs. Mary Scharlieb, M.D., at the breakfast of the National Temperance League in connexion with the Brighton meeting of the British Medical Association, of which an abstract was given in THE LANCET of August 2nd, p. 293. In an article on Parental Example and Intemperance, the Rev. Professor W. F. Lofthouse summarises the results of an inquiry which he has carried out on this subject by the method of the questionnaire. The replies received appear to have been somewhat indefinite and on some points contradictory, but they showed at all events that the influence of parental example may possibly cause reaction instead of imitation, so that drunkenness in the parents may lead to fanatical teetotalism in the children. An inquiry of this sort if carried out on a wider scale and with more precaution against subjective influences might be of value. In the course of some brief remarks on the Psychological Aspects of the Alcohol Problem, Dr. G. E. Partridge pleads for the abandonment of the naïve ethical judgments which have played so large a part in the discussion of the liquor problem, and outlines a scheme of psychological inquiry into the nature and origin of intoxication motives, considered firstly in relation to the organic constitution; secondly, to environmental conditions; and thirdly, to political, economic, and

social activities. The article is suggestive, but necessarily somewhat sketchy.

Revista de la Sociedad Medica Argentina.—Dr. Romulo Chiappori contributes to the current issue of this review an interesting paper on the pathology and inter-relations of the familial systemic degenerations of the nervous system, Friedreich's disease and the syndromes of Strümpell and Marie. The author strongly supports Raymond's view ("Pathologie Nerveuse," 1910) that these affections are not to be regarded as distinct entities, since they are but rarely found pure, patients suffering from any of these affections presenting, in the great majority of cases, both clinically and anatomo-pathologically, symptoms of more than one member of the group. An important feature of the paper is an elaborate and detailed study, histological and macroscopical, copiously illustrated by plates, of the lesions presented in the cerebrum, cerebellum, and upper part of the spinal cord in a case of spasmodic tetraplegia in a child of 4. An excellent bibliography accompanies the paper.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Remuneration of Asylums Medical Officers.

THE Metropolitan Asylums Board recently decided to increase the remuneration of assistant medical officers, giving as one of the reasons that the scale in the London County Council asylums service was higher than that of the Board. At the meeting of the London County Council on Oct. 28th, however, the Asylums Committee reported that it had adopted an increased scale of remuneration in respect of these positions. The committee stated that lately it had experienced great difficulty in securing the services of assistant medical officers, and it had become apparent that steps must be taken to improve and render more attractive the positions of the assistant medical staff in the London asylum service. The scale of remuneration for assistant medical officers had not provided hitherto an annual increment for any grade except the first. The fifth and sixth assistants received £170 a year each, the fourth £190 a year, the third £210 a year, and the second £250 a year in each case, with board, lodging, and washing, valued for superannuation purposes at £90 a year. The first assistant received a remuneration of £310 a year, rising by £25 a year to £410, with the same residential emoluments. The amended scale now adopted was as follows:—First assistant medical officer: commencing salary £350, rising by annual increments of £35 a year to £450. Second: £290, rising by annual increments of £10 a year to £330. Third £250, rising by £10 a year to £280. Fourth: £220, rising by £10 a year to £250. Fifth assistant medical officer, and all appointments under: £200, rising by annual increments of £10 to £220. The salaries included board, lodging, and washing in each case. The committee stated that the present expenditure on salaries for assistant medical officers amounted to £11,535 a year, and the amended scale involved an immediate increase of £1620, or just over 14 per cent.

Treatment of Uninsured Persons Suffering from Tuberculosis

When the Council adjourned the report of the Public Health Committee on the treatment of tuberculosis in London [1] had not been reached. The committee submitted a further report as to arrangements for the residential accommodation of uninsured persons. The committee remarked that as the result of legislation passed last session the position of the Metropolitan Asylums Board in relation to the provision of accommodation had materially altered, and, as already reported, the Local Government Board had expressed the opinion that the Council could now deal with the Asylums Board as with any other sanatorium-providing authority. In addition to accommodation which could be provided by the Metropolitan Asylums Board there was no doubt a number of beds at hospitals and sanatoriums available for London patients, and doubtless the existing accommodation, if found to be insufficient, would be augmented by the authorities concerned if they were satisfied that the Council would enter into arrangements with them for its use. The committee invited the Council to express the following opinion:—

That any comprehensive scheme for dealing with the treatment of tuberculosis in London shall provide that the Council shall make arrangements with the Metropolitan Asylums Board, with hospitals, and with sanatoria for the provision of the residential accommodation required for London uninsured patients suffering from tuberculosis; and that it be referred to the Public Health Committee to consider and report whether adequate provision can be made in this manner without the Council being called upon itself to own and manage institutions.

To this Major LEVITA gave notice of an amendment expressing the opinion that the Council should not act as a financial intermediary between the Local Government Board and either the Insurance Committee or the borough councils, and should leave the local health authorities, together with the Metropolitan Asylums Board and other institution-providing bodies, to deal with the disease of tuberculosis under the same administration as at present dealt efficiently with other diseases.

Future of the Mount Vernon Hospital, Hampstead.

The London Insurance Committee wrote directing attention to the fact that the authorities of the Mount Vernon Hospital at Hampstead wished to dispose of the hospital, and suggesting that the institution should be secured if possible for the treatment of insured persons in London suffering from tuberculosis. The Public Health Committee advised the Council to decline to purchase the institution, and to direct the attention of the Metropolitan Asylums Board to its impending sale.

[1] THE LANCET, Oct. 25th, p. 1205.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on Oct. 30th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The PRESIDENT announced that Mr. Frank Caldicott had been elected twenty-first Jenks Scholar.

The following gentlemen having passed the required examination were admitted Members of the College: John Rupert Collins, M.D. Dub. (Cheltenham); Reginald Robert Elworthy, M.B. Lond., L.R.C.P.; George Graham, M.D. Camb., L.R.C.P.; John Athelstan Braxton Hicks, M.D. Lond., L.R.C.P.; and Charles McMoran Wilson, M.D. Lond., L.R.C.P. (Hastings).

Licences to practise physic were granted to 105 gentlemen who had passed the necessary examinations.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, dated August 2nd and Oct. 13th, reporting proceedings of the Council of that College on July 31st and Oct. 9th respectively. 2. From the clerk of the Privy Council, dated Oct. 2nd, with enclosures relating to the International Health Bureau established at Jerusalem, and asking for observations upon the subject. After some discussion it was resolved that the substance of the communication and the correspondence in connexion therewith should be printed and distributed to the Fellows. 3. From Mrs. Edward Walker, of Wimbledon, dated Oct. 7th, offering for the acceptance of the College an original prescription of "Gregory's powder." The gift was accepted with thanks. 4. From Mrs. J. G. Curtis, of Chatham, Mass., U.S.A., dated Oct. 3rd, notifying that she has sent to the College, in accordance with the wish of her late husband, certain papers of the late Dr. Greenhill. The receipt of the papers was acknowledged with thanks.

A report was received from Dr. Aldren Turner upon the Third International Congress of Neurology and Psychiatry held in Ghent. The thanks of the College were given to Dr. Turner for his services. A report, dated Oct. 7th, was received from the Committee of Management. The Committee recommended that the Central London Ophthalmic Hospital should be recognised for the course of clinical instruction in ophthalmic surgery.

Dr. Frederick Taylor was re-elected a member of the Committee of Management.

After some further formal business the PRESIDENT dissolved the Comitia.

In the report of the Comitia held in July last it should have been announced that Dr. W. Rees Thomas, a Member of the College, had passed the additional examination (open to Members only) in Psychological Medicine. This was the first occasion that this examination had been held.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 8, 1913.

Research Work in Insanity and the Study of Curative Treatment of the Insane.

IF we read the signs of the times aright, British psychiatry is beginning to awake from its lethargy. Some 18 months ago we drew attention [1] to the unsatisfactory state of psychiatry in England, its comparative failure to advance notwithstanding the wealth of the material at its disposal, the obvious disadvantages under which the assistant medical officers of average asylums labour, and the absence of schools or clinics, except at one or two places, to attract the overseas visitor or to enlist the foreign graduate as a voluntary worker. But it is impossible for things to remain as they are once the interest of the profession is aroused. Those who have devoted and are devoting their best energies to the advancement of scientific psychiatry come in touch with kindred spirits from foreign schools, and their enthusiasm is bound sooner or later to exert a leavening influence on the great mass of latent energy that is to be found in our asylums and similar institutions, waiting for a suitable outlet to develop its powers. British psychiatry can no longer revolve in an eddying backwater while the current of scientific research is flowing strongly past it.

The problem to which we believe the psychiatrical expert is now thoroughly alive is, how to utilise for scientific and curative purposes the immense material at its disposal. An asylum should be as much a centre of research as a hospital: we all know that any self-respecting hospital will labour to keep itself well equipped and to render itself up to date, and the report which we publish this week by Dr. H. OSWALD SMITH, of the Standing Lunacy Committee of the Surrey county council, on the desirability of organising a research laboratory at Netherne Asylum, shows that similar efforts are being made by mental institutions. This is indeed a most welcome indication of advance. We are well aware that not a few asylums, county and otherwise, are provided with adequate laboratories and ample material, yet the output of clinical or pathological research is regrettably limited, almost entirely, we venture to think, because the incubus of routine work overwhelms the medical officers. Those who have lived and worked in large asylums know how appalling that routine may become. Dr. SMITH, in the case of Netherne Asylum, recommends that research work should be undertaken by a specially appointed officer, either a pathologist or a laboratory physician. The proportion of medical officers who are able to snatch time from their ordinary labours to devote to the prosecution of knowledge for its own sake is a small one, although, no doubt, opportunities are not wanting, but as at present constituted the daily programme of the medical officer of an average asylum is such as to render nugatory the efforts of many, even with the best intention in the world, to follow up lines of study and investigation which offer themselves to the observant physician. The proposal, therefore, is to appoint a special officer to work in coöperation with the medical staff, to perform duties more or less analogous to the clinical pathologist of the up-to-date hospital, to associate with the staff in the carrying out of modern lines of treatment rendered necessary by advance in our knowledge of syphilis, of diseases of the ductless glands, and so on. We are less concerned at this moment with the actual adjusting of the relations between such an officer and the residential medical staff; we should think the assistance thus provided and the atmosphere of research thus created are calculated to prove of the greatest value. What elicits our sympathy and our support is the determination of a responsible board to bring their institution demonstrably nearer that high level of attainment in curative research reached by the Crichton Royal Institution at Dumfries and by some other asylums in other parts of the country. The report is indicative of a freshening of spirit on the part of asylum authorities and of a healthy restlessness under present limitations which augurs well for the future.

Indeed, we see for a movement subjecting the material of our lunatic asylums to comprehensive and detailed research possibilities for great development. When the lessons learned in the laboratories of the psychiatrist are made available for the use not only of the pathologist but of the general biologist, the biometrician and the eugenist, it is certain that explanations may be forthcoming of problems which at present are perturbing the minds of many. Dr. CHARLES MERCIER, in his address upon heredity and inheritance as they concern the physician, delivered before the Society for the Study of Heredity and published in our columns this week, deals with several of those problems in a typically witty, whimsical, and dogmatic manner. With some of his criticisms we shall all be in accord, for he is a wise man and a master of his subject, while in other directions his following will not be so large; but a thoroughly scientific inquiry into the pathological condition of the inmates of our asylums cannot fail to clear away differences of opinion, if only by supplying firmer ground upon which to found opposing arguments.

[1] THE LANCET, April 6th, 1912.

The Extension of Plague.

IT is maintained by many authorities that an epidemic of human plague rarely occurs without an antecedent epizootic among rodents, generally the rat. Similarly it is contended that the endemicity of plague in certain well-defined regions is always associated with an enzootic, and that this occurs often among rodents of the marmot tribe, as, for example, in the tarbagan (arctomys bobac) in Mongolia and other parts of Central Asia, the suslik or spermophile (spermophilus guttatus) in the government of Astrachan in European Russia, and the ground squirrel (citellus beecheyi) in the State of California in North America. In each of these instances just mentioned the flesh of the animal is prized by the natives and eaten in a cooked or

uncooked condition. Cases are reported where plague has developed after the ingestion of such flesh; sometimes the hunter or trapper contracts the infection through an abrasion on his hand while skinning the animal. It is, however, probable that the most usual way in which plague is transmitted from the marmot to man is by the agency of the flea as it leaves the dead or dying animal to seek for a fresh host in man, failing another available marmot.

The history of plague shows that after a pandemic has ravaged the world the disease disappears, often for a long period, emerging again unexpectedly and spreading rapidly from east to west over the globe. Epidemiologists have long regarded China as the home of plague where the virus lies latent between the great pandemics; and history shows plague to be a disease of great antiquity in China. Recently it has been suggested that the conservation of the plague virus in China is due to the tarbagan, the haunts of which are far removed from those of man and the rat; so that long years may elapse before an accidental transference of the infection from the tarbagan to man takes place. So long as man keeps away from the tarbagan so long, it is maintained, plague remains latent; but when, as of late years, a demand for the fur of the tarbagan has arisen, Mongols, Buriats, Manchus, and even Cossacks are as a consequence recruited in considerable numbers to hunt and trap the animal on a large scale. It is evident that if plague existed among the tarbagan it is likely under such circumstances to be transferred on some occasions to the trapper in one of the ways indicated above. This is the generally accepted explanation of the origin of the terrible Manchurian epidemic of the winter of 1910–11. On the other hand, Dr. WU LIEN TEH (G. L. TUCK), director of the North Manchurian Plague Prevention Service,[1] contends that the rôle of the tarbagan in the spread of plague is not so important as some experts would have us believe. The Russian and Chinese Governments, however, seem to look upon the tarbagan as a source of danger, for during the last two years both Governments have prohibited the systematic hunting or trapping of this animal. The commission appointed by the Russian Government to investigate the cause of the continued endemicity of plague in the steppes of Astrachan found reasons for suspecting the suslik, or spermophile, of harbouring the disease. Although not yet sanctioned by the Government, plans are under consideration for the wholesale destruction of this marmot in Astrachan. It has been shown by experiment that infection of plague in this animal may be greatly prolonged, especially during the hibernating season. The population of that part of Astrachan where plague is endemic is sparse, and although year after year without exception plague appears among the nomadic tribes of this region, commonly in the pneumonic form, the outbreaks never attain large proportions, probably because the available human material gets exhausted in a short time. Nevertheless, the existence of this plague endemic area on the eastern borders of Europe is not without a certain amount of danger to the Western nations, with which, however, it has but little intercommunication.

In California there has existed for some years an enzootic of plague among the hordes of ground squirrels which infest the open plains of the great interior valley as well as the foot-hills and rocky canyons of that region. Sporadic cases of human plague occur from time to time within this area, the last instance being reported so recently as September. Inquiry invariably shows that the person attacked had been shooting, trapping, or otherwise handling ground squirrels on farms where infected animals had previously been discovered. This enzootic of plague has been found so far to extend to 12 of the Californian counties, Contra Costa and Alameda being the worst affected. To Passed Assistant-Surgeon GEORGE W. MCCOY, of the United States Public Health Service, we are indebted for much valuable information respecting plague in the ground squirrel. He has pointed out that in the vicinity of some Californian towns this animal and the rat may be found living in the same burrows. The flea usually present on the ground squirrel feeds readily upon the rat, and the rat flea is equally ready to feed on the ground squirrel. So that it would not be difficult for an infected ground squirrel to infect a rat through the flea and for this rat to carry the disease into a human habitation and communicate the infection to man. This danger is now generally recognised in California, and since 1908 a determined effort has been made to exterminate the ground squirrel, more particularly in the zones around the towns where the danger is regarded as being greatest. This animal, apart from plague, is regarded as a pest, for by its depredations on the crops it causes great losses annually to the farmer. Enzootic plague in California is a menace to the United States, since there is always the possibility of the actual transference of plague infection from these animals to man; and this, in conducing circumstances, might lead to a human epidemic of serious proportions. That the authorities are alive to the danger is evident, for the Californian State Board of Health has sent its secretary to Washington to confer with the Surgeon-General of the Public Health Service, and to invoke the assistance of the Federal Government in carrying out a campaign of "decitellisation," or extermination of the incriminated ground squirrels. All the evidence collected up to the present day points to the conclusion that the persistence of plague from year to year in a locality cannot be attributed to the conservation of the bacillus pestis in a free state outside the living body, but that the persistence is maintained exclusively by the passage of the virus from one living body to another. It may also be inferred that plague was originally a disease peculiar to rodents, and that its extension to the human species was in the first instance accidental.

[1] THE LANCET, August 23rd, 1913, p. 529.

The Housing Problem in Dublin.

THE leaders of the Labour party in their various speeches in perturbed Dublin during the bitter industrial dispute have said accurate and inaccurate things, shrewd and foolish things, but when any of them laid stress on the housing conditions to which the Dublin workman is subject he was sure of an attentive and sympathetic hearing, for it is well known that the Dublin housing conditions for the labouring classes are too often scandalous. The socio-political circumstances in Dublin have quieted down during the last few

days, but the insistence of the labour leaders on the importance of dealing with the housing question, following on the collapse of two tenement houses a few weeks ago, seems to have aroused the public conscience. Something is going to be done; one of the most pressing of municipal and sanitary problems in Ireland is, we hope, going to be tackled. It is at last felt by the community that the housing conditions of Dublin are not merely, as they have been for years past, a danger to the public health, but that they are becoming a menace to the social order.

The facts have, of course, long been known to all who cared to know them. In his official reports Sir CHARLES CAMERON, the medical officer of health of the city, has set them out year by year, when they form the regular text for leading articles in the daily press, where at other times the reflections by medical men and sanitarians upon the matter are regarded apparently as unnecessary jeremiads. Similarly, in his periodic charges to the city grand jury, the Recorder of Dublin, Mr. T. L. O'SHAUGHNESSY, has assigned to the housing conditions of the poor the origin of most of the crime which comes before him. Some of the facts given by Sir CHARLES CAMERON in his last annual report, that for 1912, which has been recently issued, are of such a nature that it is difficult to understand why popular outbursts and subsidence of structures have been necessary before the apathy of the authorities was overcome. The death-rate of the city was 22 per 1000 of the population, and the mortality under 1 year of age was 140 per 1000 births. These figures on their face only convey half their message. Both infant and adult mortality were specially high in the labouring class, so that in less than one-third of the community more than one-half of the deaths of children under 5 years occurred. The houses occupied by the workmen, the parents of these luckless children, are in many respects beautiful ones. They are, almost without exception, Georgian residences formerly occupied by the country gentry and professional families. Many of them are mansions of considerable beauty and size, and they have still the advantage that the rooms are large and lofty, and staircases and landings are spacious. These mansions are decayed to the ruin point, but they still display the virtues of their conception. Other houses are smaller and have little of either light or air, but in both the large and small houses the lettings are for a great part in single-room tenements. There are, in fact, 21,113 families, with a population of about 69,000, living in single-room tenements. That is to say, that over one-fourth of the population of Dublin live in such conditions. In Bristol, a city little larger than Dublin, the proportion of the population living in single-room tenements is only 1·5 per cent., and in Edinburgh, which historically and socially has many resemblances to Dublin, only 5·6 per cent. Needless to say, the death-rates in these cities are much lower than in Dublin. It requires little imagination to conjure up the picture of dirt and disorder to which such over-crowding as occurs in Dublin must conduce. The question of lavatory accommodation is but one of many, but the circumstances set out in this connexion by Sir CHARLES CAMERON may be taken as typical of the horrid whole. It is unusual, it appears, for these houses to contain any sanitary accommodation within the walls—not, perhaps, a matter of great complaint; but the only provision for a houseful of 30 or 40 people—men, women, and children—is too often one water-closet in the yard. It goes without saying that this water-closet, being used by six or eight families, is frequently in a filthy condition, and similar blindness to the ordinary rules of cleanliness can be witnessed in all the domestic circumstances of the Dublin lower classes. It is high time for reform.

It is not to be thought that no attention has been hitherto paid to the housing question in Dublin. Both the Dublin corporation and Lord IVEAGH have spent large sums in clearing some of the worst spaces and erecting healthy and sanitary dwellings. Unfortunately the rents required for these dwellings have put them beyond the reach of the labouring classes, and the tenants are artisans and clerks. Meantime, the clearance of the areas occupied by these new blocks has necessarily increased the congestion of surrounding areas, and the labouring classes, who constitute a large proportion of the working population, find themselves no better off. Under present economic conditions it seems impossible to provide housing for the working-classes at remunerative rents, and the problem is so urgent that improvement in economic conditions cannot be awaited indefinitely. The question is one, therefore, of capital expenditure either by the municipality or the State. The appointment of a Vice-Regal Commission to report as to the best means of procedure has been pressed, but when the Chief Secretary was approached he would not go further than to promise a departmental committee of the Local Government Board. As this body has been fully aware of all the circumstances for years, and has remained inert, little is expected from this proposal by the inhabitants of Dublin.

Annotations.

"Ne quid nimis."

THE PREVALENCE OF FATAL BURNS IN CHILDREN.

EVERY house surgeon and dresser knows how heavy is the toll in infant life, suffering, and deformity occasioned in children through accidents by fire. He also realises that although life may often be saved and suffering alleviated, the resulting disfigurement which in greater or less degree attends nearly all such accidents is permanent. It becomes, therefore, of the first importance that all investigations bearing upon the prevention of such accidents should receive careful consideration. In this connexion attention is called to the article on the mortality of children from burning, by Dr. W. A. Brend, which appears elsewhere in this issue, in which he classifies the deaths in children due to burning between 1906–1911, according to their ages, in boys and girls respectively. Dr. Brend, we think, makes out a good case for the view that the dress of girls is the predominant factor in the great disparity there shown to exist between them and boys as the subjects of such accidents, for this disparity begins to show itself only from the age at which the dress becomes differentiated in the sexes—i.e., about the third year, at which

time the ratio progressively decreases in boys, but continues to increase in girls until years of discretion are reached, and even then a decline occurs only very gradually. While the use of inflammable materials is no doubt partly to blame, Dr. Brend lays stress also on the fact that layers of such garments enclosing strata of air between them greatly increase the danger. The tendency to superimpose layers of garments on children is decreasing in these days and giving way to methods of dress more suited to bodily activity, but there are still many thousands of children, female children in particular, who are made into perambulating bundles by ignorant, well-meaning parents. A recognition of the part played by these layers of garments in relation to serious burns will doubtless tend to hasten their much-to-be-desired abolition. A totally different sort of burn is discussed by one of our Scottish correspondents, who points out, also in this week's issue, that a great many of the burns that occur in children in Aberdeen, according to the last report of the medical officer of health, were attributable to the application of poultices to relieve trouble in the chest or abdomen. It seems strange that such lack of ordinary judgment should obtain, but when we recall the fact that even nurses have been known to bathe patients in water that scalded them, one must not be too much surprised at a lack of discrimination in an untrained public. Both forms of injury have this in common—they point to the desirability of a general school training in at least the rudiments of physiology and hygiene.

MOUNTAIN SICKNESS IN THE ANDES.

FEW medical men have such opportunities of studying at first hand the symptoms of mountain sickness as those enjoyed by Dr. T. E. Ravenhill, who contributes a graphic account of this malady to the *Journal of Tropical Medicine and Hygiene* of Oct. 15th. For two years he acted as medical officer to a mining district in the Andes, situated at an altitude of over 15,000 feet above sea level. The railway brings passengers in 42 hours by fast train, in two days and a half if the journey be broken at Calamba, from Antofagasta on the Chilian coast to this high level. Arriving about midday the passenger complains of no symptoms until towards evening; then lassitude is felt, and he wakes up next morning with severe frontal headache, often with vomiting and with a rapid pulse. The tongue is furred and the eyes are dull and heavy, but the temperature is subnormal. A better day follows, and if the patient stays quiet the attack is soon over. To these symptoms, which are known to the natives as "puna," certain serious features may be added. If these are cardiac in type the patient presents the appearance of acute heart failure; the pulse is rapid and the heart-sounds feeble, there is cyanosis with intense dyspnœa, and if this condition is not treated by immediate return to a lower altitude death may follow quickly. It is curious that while perfectly healthy, robust persons may be attacked in this way, those who have cardiac disease are not specially afflicted. In the nervous type of puna delirium may be a prominent symptom, or there may be troublesome and persistent vertigo. In about 20 per cent. there is some epistaxis, but it is rarely profuse; occasionally blood is poured out from other mucous membranes. Puna is more frequently experienced by those who arrive in the mountains during the thundery weather which is common in the earlier part of the year; the best day for arrival is one characterised by clear, dry, cold weather. Those who take alcohol on the journey up suffer worse than those who do not; but travellers who expect to ascend the Andes may be consoled to hear that Dr. Ravenhill found that smoking does not aggravate the symptoms. Muscular work is apt to exaggerate the attack, and it is wise to keep quiet for a day or two after arrival Women seem to suffer less than men, and children less than adults. The aborigines do not suffer from puna as a rule. For the ordinary cases rest in bed with the window well open was sufficient to effect a cure. Aspirin was found to relieve the headache. Certain indigenous herbs, taken in the form of infusions, are supposed by the natives to have a curative action; this, however, Dr. Ravenhill's observations failed to confirm. He found the effect of oxygen inhalations disappointing. It appears that those who live for some time at high levels acquire a certain immunity to these symptoms, which lasts for a short time even if they return to low levels, but a sojourn of any duration quite destroys the beneficial effects of acclimatisation. On the other hand, the man who lives at the high levels feels fatigue more readily than one who has been living at ordinary altitudes and comes up thence to the mountains. The quicker the upward journey, the more intense the symptoms; and in certain valleys and other districts persons are inexplicably more liable to puna. A rapid descent to the lower altitudes is as a rule attended by little discomfort beyond headache and tinnitus. In conclusion, Dr. Ravenhill gives some interesting figures to show how rapidly the number of red blood corpuscles increases on arrival at high altitudes; in his own case they passed eight millions per cubic millimetre on the fifth day, and remained there or thereabouts indefinitely, and observations on other persons showed that this was an average experience.

VAGITUS UTERINUS.

VAGITUS uterinus is a very rare occurrence. Indeed, the reported cases have been received with considerable scepticism, and the arguments have been advanced that the sound heard was produced outside the uterine cavity and that air cannot gain access in sufficient quantity for respiration. In the *New York Medical Journal* of Oct. 11th Dr. J. H. Telfair has reported the following case which is unusually convincing, as the cries were heard by four practitioners. A woman, aged 24 years, was in her second labour at the Lying-in Hospital, New York. The first labour had been easy and the pelvic measurements were normal. After 38 hours she was exhausted and the cervix had dilated to the size of a silver dollar. As the fœtal heart was becoming weak and irregular it was decided to interfere. The cervix was soft and was manually dilated to the full extent in 20 minutes. The head was in the right occipito-posterior position and unengaged and the membranes were unruptured. Internal podalic version was performed, the membranes rupturing when version was half completed—i.e., when the long axis of the fœtus was at right angles to the uterus. At this time Dr. Telfair's right arm was in the uterus up to the elbow. The left leg was brought down to the vulva. He had just grasped the foot loosely preparatory to traction when his assistant flicked the sole with his finger. The plantar reflex was excited and the child gave a prolonged cry followed by two short, sharp cries. The cries sounded exactly as if the child were completely enveloped in a heavy blanket. Hurried extraction was performed, occupying less than a minute. The child breathed and cried normally without stimulation and showed no signs of having inspired more than the ordinary amount of mucus. It weighed 3560 grammes. Owing to the rapid delivery the cervix sustained severe bilateral laceration, which was repaired at once. The puerperium was uneventful. Three other members of the hospital staff (an attending physician and two of the house staff) were present and heard the cries distinctly. Dr. Telfair asks the question, Could a man of any experience mistake any other sound for the cry of a babe? In the criticism of the recorded cases the sound has been

attributed to a vibrating fold of membrane in the vagina, to the passage of gas per rectum, intestinal rumbling, and so on. For the production of vagitus uterinus two things are necessary: ruptured membranes and the presence of air in the uterus. In introducing the hands or instruments into the uterus it is difficult to exclude air. Air having once gained access, what is to prevent it filling all the interstices between the fœtus and the uterine wall? In normal labour after rupture of the membranes the head acts as a plug, and sufficient liquor amnii to fill the interstices between the fœtus and the uterine wall remains. During operative delivery the whole of the liquor amnii may drain away, and the interstices then become filled with air. The hand and arm of the accoucheur in the uterus, by further separating the uterine wall from the fœtus, enlarge the space not filled by the fœtus. Given air in the uterus one inspiration would be sufficient for a cry. There are two theories as to the cause of the commencement of normal respiration—the stimulus of air on the skin and the accumulation of carbonic acid in the blood in consequence of separation of the placenta. In the case recorded above stimulation of the skin seemed to be the cause, for the uterus did not appear to be sufficiently retracted to cause separation of the placenta. Moreover, the success of cutaneous stimulation of the newly born child when cessation of the placental circulation has failed is well known. Of 44 reported cases of vagitus uterinus more than half were operative deliveries, 11 being forceps, 15 versions, and one replacement of arm and cord. The fœtal mortality was 10 per cent. Dr. Telfair holds that once vagitus uterinus is heard the only hope of saving the child lies in rapid extraction, even at the expense of maternal lacerations. But unless the stimulus to inspiration be separation of the placenta, which he argues is not necessary, it is difficult to see why the child should be regarded as in so much danger.

WILSON AND WILSON v. MICHIE.

IN a probate action arising out of the will of Julia Beale Clout, a widow 49 years of age, a brother and sister of the deceased claimed to have the probate of her will and of a codicil, both made in 1912, revoked. By these the testatrix gave the whole of her property to Mr. J. Michie, who had been her medical attendant during the latter years of her life. By previous wills her relatives would have benefited. The plaintiffs alleged that the will and codicil had been made under the undue influence of the defendant, and also that at the time the deceased was of unsound mind and wanting in testamentary capacity. The solicitor who prepared the will and codicil in question, under which Mr. Michie was sole executor, gave evidence to the effect that he took his instructions from the testatrix in her own house, and that the defendant was not present either when the instructions were given or when the will and codicil were signed. He also stated that the testatrix was at the time of a sound disposing mind. This evidence, so far as it concerned the mental capacity of the deceased, and the absence of any appearance of influence exerted by the defendant, was corroborated by a servant and a nurse. The defendant also went into the witness box and gave a full account of his relations with the deceased, which, he stated, were those of a medical man towards his patient. There was evidence given of dislike evinced by the deceased towards her relatives. After the defendant's case on behalf of the will and codicil had been concluded the plaintiffs gave evidence, and witnesses were called on their behalf. The judge having summed up, the jury, without leaving the box, found that the will and codicil had been duly executed, that the deceased knew and approved of their contents, and that they had not been obtained by the undue influence of the defendant. Judgment was accordingly entered for the defendant with costs, Mr. Justice Bargrave Deane declining to allow costs out of the estate in the case of charges of using undue influence which had broken down.

ENTEROGENOUS MESENTERIC CYSTS.

A DEVELOPMENTAL anomaly which has received attention only in recent years is enterogenous mesenteric cysts. Their literature is almost entirely foreign; about 100 papers have been published since 1900. Enterogenous mesenteric cysts are of considerable surgical importance, but have probably never been diagnosed before operation or necropsy, and their mortality is about 35 per cent. In the *Johns Hopkins Hospital Bulletin* for October Dr. R. T. Miller has reported the following case. A female child, aged 4 days, was admitted into St. Francis Hospital, Pittsburgh, on Sept. 28th, 1912. She was the last of 13 children, all of whom, as well as the parents, were alive and well. Labour was normal. The child vomited everything taken, and the vomit was greenish-black. The bowels never acted, and there was no stain on the napkin. On examination she looked very ill. At intervals she cried in a thin weak voice as though suffering from paroxysms of pain. There was marked cyanosis of the face and hands. The skin was dry and wrinkled, especially over the extremities. The expression was pinched and drawn, and the limbs were little moved. The abdomen was not distended, and there was no visible peristalsis. Palpation caused the child to cry and was unsatisfactory. No mass could be felt or muscular spasm recognised. The abdomen generally was tympanitic, and there was no dulness in the flanks. The little finger could be inserted its full length into the rectum without encountering any obstruction. The rectal temperature was 97° F. Intestinal obstruction due to some unknown cause was diagnosed. Under chloroform a right rectus incision was made. On opening the peritoneum both dilated and collapsed cyanotic loops of small intestine were seen. In the right flank just below the level of the umbilicus a freely movable mass was found. This proved to be an oval intramesenteric tumour, about 4 cm. in its greatest diameter, and quite firm. Over the dome of the mass coursed a loop of small intestine which was flattened into a thin band by pressure. There was a volvulus of the mass and affected sector of the bowel of more than 180°, causing complete intestinal obstruction. The afferent bowel was greatly dilated and the efferent bowel collapsed. After reduction of the volvulus a circumferential area of pressure necrosis with a minute perforation was found. The patient's condition demanded haste, but a rapid enterostomy was not feasible as the obstruction was high in the jejunum. Resection and lateral anastomosis were hurriedly performed and the abdomen closed. Death occurred five hours after the operation. The tissue removed consisted of a loop of bowel 8 cm. long, within the mesentery of which was an egg-shaped mass measuring 4 by 3 cm. This was a cyst the wall of which was in part directly continuous with that of the jejunum. The cyst was lined with a layer of columnar epithelial cells bearing villi and resting upon a layer analogous to the submucosa, outside which were transverse and longitudinal layers of smooth muscular fibres. The structure of the cyst was thus exactly similar to that of the bowel, from which it had evidently been formed by sequestration during embryonic life. The adjacent portion of bowel was so stretched that its lumen was represented by a mere slit. In 1907 Niosi gave what appears to be the best classification of mesenteric cysts of embryonic origin, which is as follows. 1. Cysts of intestinal origin —(*a*) by sequestration from the bowel during development; and (*b*) from Meckel's diverticulum. 2. Dermoid

cysts. 3. Cysts arising from retroperitoneal organs (germinal epithelium, ovary, Wolffian body, Müllerian duct). The idea that a portion of an embryonic organ may become sequestrated and continue to develop, usually in an anomalous manner, is familiar. The lumen of the cyst constantly but slowly enlarges in consequence of retention of its own secretion. The actual process of sequestration from the developing gut was not observed until 1908, when Lewis and Thyng described the "regular occurrence of intestinal diverticula in embryos of the pig, rabbit, and man." These diverticula consist of downgrowths of the intestinal epithelium which may terminate in the muscular coat of the bowel or may extend quite through the bowel wall to form knob-like projections. They usually degenerate and disappear, but if one persists it may give rise to a mesenteric cyst. The surgical importance of mesenteric cysts lies in their liability to give rise to acute intestinal obstruction. The best treatment is enucleation when it can be done without seriously injuring or opening the bowel.

THE REGISTRATION OF PLUMBERS.

FROM a strictly medical standpoint the plumber is well deserving the attention he has received within recent times, but more is required to safeguard the public against possible evils likely to arise from incompetence or carelessness on the part of men engaged in plumber's work. Mr. W. D. Caroe, R.I.B.A., Master of the Worshipful Company of Plumbers, speaking at the Royal Technical College, Glasgow, impressed upon his audience that merely registering the men was not sufficient. Responsibility should be fixed on each man for the work he has executed, and this could only be done by every individual marking his work with his registered number. Mr. Caroe thought that every skilful man would be proud to identify himself with his work. The employment of registered plumbers would then stand as a guarantee of efficiency. It unfortunately happens that a great number, perhaps a majority, of those engaged in the plumbing trade are at present not registered, and have therefore no certificate to offer to the public in proof of their capacity for discharging efficiently and conscientiously the important work in which they are engaged, though doubtless many would experience no difficulty in passing the required tests. Mr. Caroe pointed out that the complexity of plumbers' work in modern times had so increased that it was more than a handicraft—he evidently considered it to be almost a branch of practical scientific work, and much can be said for the view. He urged, therefore, on educational authorities the need of providing technical instruction in harmony with the registration system, while the system of apprenticeship should be encouraged. To the men he pointed out that they should claim the privilege of their craft and qualify for registration, setting aside petty disputes and concentrating their attention on the lifting of a responsible handicraft to its merited position. All this we endorse. Unfortunately the bulk of the public, until some catastrophe happens through his carelessness or incompetence, regard the plumber and his work with little interest. The blame for any mischance which should rest upon their own lazy shoulders is shifted anywhere else. Properly qualified men can always be obtained for plumbing work if sufficient interest is exhibited by the employer in the way in which plans are executed, and registration is the obvious method by which a good supply of men can be kept up to the standard. If only this was kept in view every capable plumber would get himself registered, in order to be distinguished from the mass, some of whom may be ignorant or incompetent workmen. Under certain conditions the Plumbers' Company guarantee the work of their registered men. At present all registered men carry a card with their number on the register. It has been suggested that it would be desirable if each man wore a badge, the absence of which would put the public on their guard. This is the day of badges, and only the demand for registered plumbers will create the supply. The suggestion has practical force.

HEALTH OF THE POST OFFICE STAFF.

IN his annual report the Postmaster-General states that the health of the staff has again been satisfactory. The average sick-rate of the established staff during the year ended Dec. 31st, 1912, was 7·5 days for men and 10·9 days for women, and of the unestablished staff 4·6 days for men and 4·9 days for women. Seventy-five deaths and 111 retirements were due to diseases of tuberculous origin. The deaths recorded through the year showed an annual death-rate of 3·4 per 1000 for men and 1·3 for women on the established staff.

THE WILLIAM H. WELCH ENDOWMENT FOR CLINICAL RESEARCH.

THE magnificent gift by the General Education Board, founded by Mr. John D. Rockefeller, of $1,500,000, to provide professorial salaries in connexion with the Johns Hopkins Hospital and Medical School at Baltimore, marks an era in medical education. A professor of medicine, a professor of surgery, and a professor of pædiatrics are to be provided by the new endowment with salaries sufficiently high to make them independent of private work, and with a staff of assistants and laboratories, and are to devote themselves to scientific research in their respective departments. Dr. William Stewart Halsted, the present holder of the chair of surgery, has already accepted his chair under the new conditions. In view of the recent report upon the affairs of the University of London, the institution of these salaried professorships is of the first interest.

THE DIFFICULTIES OF DIAGNOSIS IN ANOMALOUS PLAGUE.

IN another part of our present issue we publish a very interesting and instructive communication by Dr. W. J. Tulloch, of Newcastle-on-Tyne, on the bacteriological diagnosis of plague, and in this he draws attention to the many difficulties which exist in recognising cases of plague which may arrive on our shores on healthy ships from foreign ports not known to be infected. Dr. Tulloch urges the examination by blood culture as a method to be adopted in all doubtful cases, and if used as a routine procedure in the indefinite febrile illnesses which occur on board ships it would, he contends, be found a valuable aid to diagnosis. The particular instance so carefully described by Dr. Tulloch occurred on a ship in the Tyne. The strain of the plague infection appears to have been peculiar, since two other cases of illness had previously occurred on the same vessel while it was lying in the Elbe and just before it sailed for the Tyne. The first case was diagnosed as influenza, but proved fatal on the third day; the second case had symptoms suggestive of enteric fever, the illness lasting 23 days before it terminated fatally. Post-mortem examination with bacteriological investigation of material ultimately established a diagnosis of plague in each case. The vessel in question with a cargo of grain, which is known to attract rats to the ship while it is loading, sailed for Hamburg from the Argentine port of Rosario, which has long been under suspicion in Europe of concealing the prevalence of plague in man and the rat in that place. The ship carried four apprentices, who occupied

a cabin at the stern of the vessel far removed from the quarters of the crew. The lads had a pet rabbit which was infested by fleas; it died while the ship was in the Elbe. It is conjectured that infected rats came on board at Rosario with the cargo; and that towards the end of the voyage the rabbit contracted the disease from the rats and conveyed it to three out of the four boys who were accustomed to play daily with their infected pet. The strain of infection, though peculiar in its manifestations, was nevertheless of a virulent kind, as all three apprentices died from it.

THE LONDON COUNTY COUNCIL AND THE TREATMENT OF TUBERCULOSIS.

THE London County Council, which has now apparently accepted the view of the Local Government Board that it, and it alone, should constitute the tuberculosis authority for the metropolis, is finding the preparation of a comprehensive scheme a task of much difficulty. For over a year the Public Health Committee of the Council has been engaged upon the problem of sanatorium benefit in London, and, as reported in our columns from time to time, the Council has had before it various recommendations. But the matter progresses slowly amidst the sharp differences of opinion, upon principle as well as detail, which are revealed in debate. London still lacks, even in outline, a coördinated scheme for dealing with its estimated 50,000 tuberculous inhabitants. At its last meeting on Nov. 4th the London County Council discussed the financial basis of that part of the Public Health Committee's report which concerns dispensary treatment of uninsured persons, and eventually some measure of agreement was reached. But the formulation and the carrying into early effect of a complete tuberculosis scheme for the metropolis are such pressing affairs that we may well ask all political parties within the Council to eschew recriminations and keep strictly to the business in hand.

THE IODINE CONTENT OF FISH THYROIDS.

THE observation that a fish diet increased the iodine content of a dog's thyroid was made some time ago. The constant presence of iodine in sea water has suggested that the thyroid of salt-water fishes might contain a relatively large amount of iodine. If iodine is present in sea water as suggested by Gautier in organic combination it is probable that the iodo-organic compound is capable of assimilation and transmission. It now appears from an interesting note upon this subject by Mr. Alexander T. Cameron, published in the October number of the *Biochemical Journal*, that definite evidence has been obtained that unusually large amounts of iodine are constantly present in some species, a finding which lends some support to the view that the iodine content of the thyroid is a function of iodine in the diet. In the specimens of fishes selected for analysis the thyroid of the raia clavata was found to contain amounts which were not extraordinary compared with that found in the thyroid of the mammals, but the thyroid of scyllium canicula contained more, and in one case much more, iodine than any thyroid previously reported upon. Thus, accepting the following figures for the dog as 0·692 per cent. on dried gland, 0·588 per cent. for the human gland, 0·531 per cent. for the gland of the pig, 0·53 per cent. for the gland of the sheep, and 0·477 for the gland of the ox, the fish thyroid referred to contained as much as 1·160 per cent. of iodine. This is, of course, a very remarkable amount, and further investigations in this direction will be looked forward to with interest. The research, so far, suggests that fish thyroid would be a valuable therapeutic agent, and would appear to add strength to the view that the iodine value of the diet plays a considerable rôle in determining that of the gland.

SIR RICKMAN GODLEE'S VISIT TO THE UNITED STATES AND CANADA.

Sir Rickman Godlee, President of the Royal College of Surgeons of England, accompanied by Lady Godlee, left at the end of October for Chicago, where he is to give an address at the first congregation of the American College of Surgeons and admit the Fellows of the new college. The address will take the form of a historical sketch of the English College of Surgeons, and will detail the circumstances in which the order of Fellows came into being. Sir Rickman Godlee hopes to avail himself of an invitation to visit Toronto, where a number of Fellows and Members of the English College are resident.

THE GENERAL MEDICAL COUNCIL.

THE next session of the General Council of Medical Education and Registration is announced to begin on Tuesday, Nov. 25th. The illness of the President, Sir Donald MacAlister, has now taken a favourable turn, but he will be unable to attend the Council. A chairman will be elected for the forthcoming session, a precedent for which proceeding occurred during the illness of Sir Richard Quain in the autumn of 1897. There will be no change in the plans for the forthcoming session.

Sir Thomas Oliver will deliver a course of six lectures on "Industrial Hygiene" at the Royal Institute of Public Health, the first two of which will be given on Wednesday and Thursday, Nov. 12th and 13th, at 5 P.M.

THE King has approved the appointment of Surgeon-General Arthur Thomas Sloggett, Director of Medical Services in India, to the post of Director-General of the Army Medical Service, in succession to Surgeon-General Sir W. Launcelot Gubbins, whose term of office will shortly expire.

A SPECIAL meeting of the Representative Body of the British Medical Association has been summoned for Thursday, Dec. 4th, and if necessary Friday, Dec. 5th, at the Connaught Rooms, Great Queen-street, London, W.C. The business before the meeting includes the proposal to raise the annual subscription to 2 guineas; the alternative schemes of the State Sickness Insurance Committee and the National Insurance Act Committee for the establishment of a special fund for professional organisation; and the Council's report on various matters relating to the National Insurance Act.

THE King, acting on the recommendation of the Home Secretary, has appointed the following to be paid Commissioners under the Mental Deficiency Act, 1913: Sir William Byrne, Dr. Arthur Rotherham (medical superintendent of Darenth Asylum), and Miss Mary Dendy. The four unpaid Commissioners have yet to be appointed. The new Board of Control under the Act consists of Sir William Byrne (chairman), Dr. Rotherham, Miss Dendy, and Mr. B. T. Hodgson (secretary to the Board of Commissioners in Lunacy), together with Dr. C. Hubert Bond, Dr. Frederick Needham, Dr. E. M. Cooke, Dr. Sidney Coupland, Mr. L. L. Shadwell, Mr. A. H. Trevor, and Mr. S. J. F. Macleod, K.C. (Commissioners in Lunacy).

RESEARCH WORK IN INSANITY AND THE STUDY OF CURATIVE TREATMENT OF THE INSANE.[1]

BY H. OSWALD SMITH, M.B., CH.B. EDIN.,

MEMBER OF THE STANDING LUNACY COMMITTEE OF THE SURREY COUNTY COUNCIL; MEMBER OF THE NETHERNE VISITING LUNACY COMMITTEE, CURATIVE RESEARCH, AND MENTAL DEFICIENCY COMMITTEES.

A Report to Establish and Organise a Research Laboratory at Netherne Asylum.

THIS report is based on methods adopted by several of the large asylums, at the heads of which are medical men who have advanced psychiatry to a much more hopeful position, and whose efforts are still being maintained along these channels of research whereby new methods of treatment are evolved for the benefit of the mentally afflicted.

An asylum ought not to be merely a place where patients are well cared for and housed, but must have a definite plan so that research work is undertaken by a specially appointed officer who is enthusiastic about his work and efficient in the present-day technique of research work in psychiatry. He should have the proper facilities in a well-equipped laboratory for laboratory diagnosis and study. There must, however, be coöperation between this officer and the resident staff in the work. The primary duty of the resident staff is —(1) the proper examination, (2) treatment, and (3) care of the patients. This work provides infinite lines for study and research for the medical staff, provided always that their primary duties do not take up their whole time. It is well known that certain men who are interested in research work will make time for such extra duties; thus they keep abreast of medical progress and form their own judgment as to the permanent value of the latest advances and ideas.

There are many lines of a clinical and therapeutical nature that can be most appropriately followed out by the ordinary staff. At the same time it is of the greatest advantage to county asylums, such as Netherne, that a fairly equipped laboratory should be regarded as essential. If the ordinary medical staff find that their time is so fully taken up with the ordinary work in the wards that they have not time or that they have not the necessary technical training to do laboratory work—as to the amount of medical work in an asylum the annual admission rate gives a fair indication of the amount of work to be undertaken—a pathologist should be provided at a salary of not less than £250 a year to begin with, in order to get a really good and efficient man, because the ultimate research work would rest largely in his hands. If the assistant medical officers have time to follow up a clinical and therapeutical research, then such an appointment would bear good results, but if the medical staff have not the necessary time, then instead of a pathologist the appointment of a laboratory physician might be made at an initial salary of £250 a year.

This physician could have the laboratory fitted up according to his special requirements, and such sum as £250 as a preliminary outlay would be sufficient. It is only after years of time, thought, and expenditure of money that curative research has reached the high-water mark obtained in such asylums as the Lancashire County Asylum at Prestwich, the Crichton Royal Institution, and the Edinburgh Royal Asylum. The knowledge of curative research is added to slowly, but if such a scheme as the above is adopted at Netherne the committee will have the benefit of the research work of these asylums and the practical results. When Netherne earns such a report from the Commissioners in Lunacy as the Crichton Royal Institution did for 1912, then, and not till then, shall we be able to say that the patients at Netherne are receiving the most appropriate treatment. If the total expenditure on research work be divided by the average amount of patients under treatment a year it will be found that the general cost per caput per annum for the purposes of laboratory diagnosis, study, and research is not a fraction of the cost of each patient's keep, and such expenditure would be well worth it.

Estimate (apart from cost of building) of initial expenditure for the purpose of promoting curative research work at Netherne.

Pathologist at a salary of £250 a year, with residence; or at a salary of £300 a year living outside.

A further sum of £250 for initial expenditure in fitting up a laboratory.

The above scheme presupposes the coöperation of the resident medica staff along the lines of clinical and therapeutical treatment.

Failing this coöperation in the meanwhile the appointment of a—

Laboratory physician at an initial salary of £250 a year, with residence; or £300 a year outside.

A sum or £250 for initial expenditure in fitting up a laboratory.

Forms of application for the above post, whichever is decided upon, can be subsequently drawn up so as to get the best candidates.

Organotherapy.

The second part of this report deals with organotherapy and the open-air treatment of the active insane by rest in bed. The committee must look to the resident medical staff to carry out this part of the work. In psychiatry and neurology great advances have been made, and these are due to the whole-hearted efforts of men who have ever kept the flag of research flying. There opens out the vista of organotherapy, and by this is meant the employment of certain glandular extracts in the treatment of insanity. Thyroid extract, cerebral extract, mammary, pancreatic, ovarian, pituitary and orchitic extracts, these are some which have been used and experimented with by psychiatrists. It is known that causes of cretinism can be combated by the use of thyroid, and Brown-Séquard maintained that he had "rejuvenated" himself by orchitic extract. Myxœdema, due to the absence of the thyroid gland, can be cured by the administration of thyroid extract. Cerebral extract is found to promote the appetite, and is a good tonic to the general nervous system. These are some examples of the research work placed at the disposal of humanity and obtained by means of work in the laboratory. The committee should expect coöperative research to be based on these lines, which should also embrace the bacteriological examination of the blood and cerebro-spinal fluid, the conditions of which have an important bearing on general paralysis of the insane. The use of vaccines and antisera would have to be investigated.

Administrative duties have become so heavy that it is impossible in many cases for the medical superintendent to give much attention to clinical work, and so we must expect the assistant medical officers who have adopted lunacy service as a specialty to be properly trained in up-to-date knowledge of the treatment of the insane. Post-graduate courses are provided in connexion with most of the universities.

Open-air Treatment by Rest in Bed.

And finally there must be placed on record an estimate of a form of treatment of the insane from which there is expected brilliant results. It is the open-air treatment of the active insane by rest in bed. This treatment can be carried out by the staff without undue strain on their time and little additional expenditure of money. It has been carried out with great success at Ayr Asylum with a resulting increase in the recovery rate. Verandahs are used on the male and female sides. Separate beds with wooden partitions are placed on these verandahs. (Details of the scheme can be supplied.)

What are the effects of rest in bed in the open air in the case of newly admitted and actively insane patients, and wherein do the effects of outdoor rest in bed differ from those of outdoor exercise and indoor rest? First and foremost, there is a rapid subsidence of the active mental and nervous symptoms, there is a rapid amelioration of mania, melancholia, delirium, vivid hallucinatory and delusional manifestations, of restlessness and excitement of all kinds and insomnia. The general effect is that the large majority of newly admitted patients show distinct improvement of various morbid mental states, become less restless, more manageable, and more contented, and regain their sleep with greater rapidity than with any other known method. Secondly, there is a rapid improvement in the physical condition, a noticeable improvement in the condition of the skin, the appetite improves, and the majority readily take their food and do not require to be spoon-fed as is usual with new patients; a distinct improvement in the state of the tongue and gastric digestion if previously impaired. Hypnotics, sedatives, and laxatives can under this treatment be dispensed with. The increase in the body weight is 5 lb., 6lb., or 7 lb. during the first two or

[1] Being a report to establish and organise a research laboratory at Netherne Asylum, with remarks upon the open-air treatment of the insane and organic therapy treatment. The report was adopted by the Standing Lunacy Committee of the Surrey county council on July 7th, 1913.

three weeks on simple diet, consisting largely of milk and milk-puddings.

Similar treatment can be adopted in the cases of all residents of shorter or longer standing, exhibiting relapses or phases of active insanity, including the most difficult and dangerous cases in the asylum. The wooden partitions already alluded to add the valuable feature of isolation to the treatment. The recovery rate is remarkably influenced by this treatment. From the description of the open-air treatment of the insane it will be at once seen that the combination of rest in bed with open-air treatment secures the natural rest to the nervous system and gives the patients in their initial treatment a good chance of recovery; the cost in mere money would be very little in comparison to the benefits. It is a pleasant remedy, both to those who receive the treatment and those who administer it. In placing these points before you, I wish to acknowledge the assistance I have received from many of the leading psychiatrists, who have willingly placed their knowledge at my disposal for the benefit of the committee. I have had the privilege of reading many of the special papers published in the medical journals. The length of the report is owing to the difficulties of the subject which has been too inadequately handled by me.

The Recovery Rate and the Cost of the Schemes.

The recovery rate for 1912 on all admissions into the Crichton Royal Institute was 35·5 per cent.; the Edinburgh Royal Asylum 36·0 per cent. In both these institutions research work is diligently carried on. The recovery rate on all admissions into Netherne Asylum for 1909 to 1912 was 12·0 per cent.; Brookwood Asylum for 4½ years, 24·6 per cent. In future the annual recovery rate should be placed on record, so that a just and fair comparative result may be available.

It is therefore necessary to deal with curative research at Netherne Asylum from the practical point of view so far as cost is concerned. Dr. S. N. Crowther, senior medical officer of Netherne, has worked out the cost of a scheme which includes buildings, fittings, salaries, and upkeep. This scheme embraces the cost of open-air treatment of the insane by rest in bed and the proper grading of the insane.

Summary of annual cost per head per week.—(1) Curative research, 2·51*d.*; (2) open-air treatment, 1·35*d.*; (3) grading of patients, 4·03*d.*—total cost of three schemes, 7·89*d.* This includes salary of a pathologist and neurologist at £350 per annum.

Summary of initial and non-recurring expenditure.—Laboratory, £360; fittings and apparatus, £200; three verandahs (12 beds in each), £765—total cost of the three schemes, £1325.

The Grading of Patients.

The attention to the proper grading of patients in all asylums is called for. Asylum patients may be divided into two main classes—(1) curable and (2) incurable; and while for those of the first class every means known to science should be used to facilitate recovery, the treatment of the second class is not so important, and the present method of grading is on the whole satisfactory. It is mainly the extra cost which has hitherto deterred the asylum authorities from proper grading of patients. It was usual to distribute a certain number of noisy and excited patients among those who were miserable and depressed, with the hope that an interaction might take place to the mutual benefit of the patients concerned. Such methods must be relegated to the background, and it is only by progressive and enlightened treatment, stimulated by research, that psychiatry shall take the long-awaited step forward.

I wish to thank Dr. Crowther for his help and valuable suggestions in the preparation of my paper.

ROYAL ARMY MEDICAL COLLEGE.

ON Oct. 29th a distribution of prizes by Surgeon-General Sir HAVELOCK CHARLES, G.C.V.O., took place at the Royal Army Medical College. A large company assembled to do honour to the occasion, among them being Surgeon-Generals W. Donovan, Sir David Bruce, G. J. H. Evatt, H. R. Whitehead, W. H. Macnamara, Sir Francis Trevor, and Sir Charles Cuffe, A. W. May (Director-General of the Medical Department, Royal Navy), Sir James Porter, Sir A. Bradshaw, and many others, including Major Sir Ronald Ross, Lieutenant-Colonel P. J. Freyer, Dr. James Galloway, Mr. A. E. J. Barker, and Dr. F. W. Mott.

Surgeon-General W. BABTIE, V.C., C.B., C.M.G., Deputy Director-General, opened the proceedings by calling upon the Commandant to read his report.

Colonel BRUCE M. SKINNER, M.V.O. (Commandant), reviewed the session, the 106th of the junior class of the College, being also the twenty-third held in London. After referring to the Seventeenth International Congress of Medicine, the Naval and Military Section of which held its meetings at the College, he said there had been some changes in the staff. While regretting the completion of tenure of their appointments, they of the College wished God-speed to Major W. S. Harrison, lately professor of tropical medicine, and to Major J. C. Kennedy, assistant professor of pathology, with the hope that their talents so long devoted to this College might find fields fruitful of discovery awaiting the application of their highly trained energies. On the other hand, they welcomed their successors, Lieutenant-Colonel O. L. Robinson in the chair of tropical medicine, and Major S. L. Cummins as assistant professor of pathology. With regard to the class now being closed he reminded those present that they were fully qualified doctors before passing into the College, where they had been instructed in matters relating especially to the preservation of health and physical well-being of the soldier. He had nothing but praise for the young officers who composed this class, for they had been most assiduous and attentive, while those who had gained prizes had done remarkably well, and in two cases brilliantly, for instance, the winner of the Fayrer and the Marshall Webb medals had gained over 90 per cent. of marks in those competitions. He then read the names of those who had gained prizes, as well as those who came second, as follows:—

	Marks.
1st. The Herbert Prize (highest total of marks): Lieutenant R. B. Price, R.A.M.C.	565/700
Proxime accessit: Lieutenant H. C. D. Rankin, R.A.M.C....	536/700
Hygiene.	
1st. Parkes Memorial: Lieutenant R. B. Price, R.A.M.C. ...	153/200
Proxime accessit: Lieutenant A. K. Sinha, I.M.S.	151/200
2nd. De Chaumont: Lieutenant A. L. Urquhart, R.A.M.C. ...	144/200
Proxime accessit: Lieutenant H. C. D. Rankin, R.A.M.C....	142/200
Pathology.	
1st. Fayrer Prize: Lieutenant S. S. Sokhey, I.M.S.	181/200
Proxime accessit: Lieutenant N. M. Mehta, I.M.S.	160/200
2nd. Tulloch Memorial: Lieutenant R. B. Price, R.A.M.C. ...	168/200
Proxime accessit: Lieutenant A. L. Urquhart, R.A.M.C....	164/200
Surgery.	
1st. Montefiore: Lieutenant A. Seddon, I.M.S.	80/100
2nd. Montefiore: Lieutenant H. C. D. Rankin, R.A.M.C.	75/100
Tropical Medicine.	
1st. Ranald Martin Gold Medal: Lieutenant A. K. Sinha, I.M.S.	86/100
Proxime accessit: Lieutenant R. B. Price, R.A.M.C.	84/100
Administration.	
1st. Marshall Webb Prize: Lieutenant H. C. D. Rankin, R.A.M.C.	97/100
Proxime accessit: Lieutenant R. B. Price, R.A.M.C.	88/100

Sir HAVELOCK CHARLES next distributed the prizes with a few appropriate words to each recipient, and in his address which followed advised and encouraged the young officers as to their course in life, directing his remarks more particularly to those whose careers would lie in India. He said it was often asked why in life the race was not always to the swift nor the battle to the strong; the reason was that some men had not the tact and judgment to avail themselves of the chance when it offered. They failed through lack of character. The greatest of all assets was character. He was present at a similar meeting to this 31 years ago, and though he could not recall that any address was given on that occasion, he remembered that on his way up to town he travelled with Sir Joseph Fayrer, whose advice he asked as to how to get on in India. After looking at him for a few seconds Sir Joseph Fayrer said: "Do what you are told; don't grumble; go where you are ordered." Of course, young men going to India would have troubles like everyone else, like the panel doctor as well as the medical man in Harley-street; but they should remember Sir Joseph Fayrer's advice; and, further, they should strive to prove themselves thoroughly reliable—a most valuable characteristic for every officer. They were going to what he considered the most interesting country in the world. He wished them the best of good luck in the words of the Persian poet who said: "May the sweet waters of contentment spring up where'er you place your feet."

Surgeon-General BABTIE thanked the General Officer

commanding the London District for the interest he had shown in the Corps by his presence on this occasion, and called for a vote of thanks to Sir Havelock Charles, which was given by acclamation.

General Sir FRANCIS LLOYD, K.C.B., C.V.O., D.S.O., commanding the London District, thanked the Deputy Director-General for giving him the opportunity of letting the company know his appreciation of the work done by the Royal Army Medical Corps, and spoke in sympathetic terms upon the cordial relations springing up between them and the rest of the army.

The proceedings then closed, and the company adjourned to the mess where the officers of the Corps were "At Home."

SOME EXPERIMENTS WITH CLINICAL THERMOMETERS.

THERMOMETRIC observations in clinical practice are, of course, of the greatest importance, but the thermometer must be accurate, as unless that is the case a very serious error in diagnosis may obviously arise. Now and again the accuracy of the clinical thermometer has been impugned, but the clinical thermometers supplied by well-known instrument makers are on the whole generally trusted. It would be a counsel of perfection to lay down that every observer should see for himself that the thermometers he uses are correct recorders of temperature. In practice that is seldom done.

Nor is the offer of certification made by the authorities at the physical laboratories at Kew universally accepted. In private practice it may be, but in hospital practice probably not at all, as it adds considerably to the cost of the instrument, the fee for testing being 1*s.* for each thermometer. In THE LANCET of Oct. 4th, 1913, we published a letter from a correspondent in which he issued a warning as to the unreliability of low-priced clinical thermometers, and he recorded the results of some tests he had made with thermometers supplied by a well-known firm of surgical instrument makers at the price of 10*s.* 6*d.* per dozen. In many instances the readings compared with Kew tested thermometers were far from accurate, and the divergence was such as to render the instruments misleading, indeed valueless, for diagnostic purposes. The finding was undoubtedly a serious one, and our correspondent did good service in drawing attention to the matter. On the other hand, his results were criticised in a letter from another correspondent which appeared in THE LANCET of Oct. 11th, 1913, who regarded the variations described as not necessarily indications of faulty instruments. It is possible, he stated, to immerse a dozen quite reliable instruments in warm water and obtain as many different readings. In performing the test he pointed out that the precautions which must be observed are that the thermometers should be well "shaken down" before they are tested, that the water should be maintained at a constant temperature, and that the instruments should not touch the bottom or sides of the vessel in which they are tested." We must agree that these precautions are very reasonable when we compare what may be called the artificial method of testing with the conditions under which the body temperature is taken. Their observance, at any rate, has the merit of scientific method and shows, according to our second correspondent's experience, that the percentage rejections of clinical thermometers supplied to the hospital to which he is attached, which "is very small indeed," has reason behind it.

We have recently made a number of tests with clinical thermometers on these lines, and so far our experience agrees with the more favourable view expressed in our columns, but with one important limitation. We obtained thermometers from several well-known instrument makers, the charges for them being from 1*s.* 6*d.* to 2*s.* 6*d.* a piece, not, be it observed, 10*s.* 6*d.* per dozen. They were bought in the ordinary way, no information passing as to the special purpose for which they were required. The thermometers were marked "30 secs.," indicating that they were adjusted for making short-time observations. We considered it of interest to test these after 30 seconds' immersion in a bath of water at various temperatures chosen to represent the human range, and to repeat the trials keeping the thermometers immersed for two minutes. The results are recorded in the following tables, the temperatures, as shown by a standard thermometer used for scientific purposes in the chemical laboratory and ascertained to be accurate, being respectively 95·3° F., 98° F., 100·3° F., 105·3° F.

TABLE I.—*Immersion Temperature 95·3° F.*

Thermometers and prices.	Temperature shown by standard thermometer, 95·3° F.		Thermometers and prices.	Temperature shown by standard thermometer, 95·3° F.	
	½-minute readings.	2-minute readings.		½-minute readings.	2-minute readings.
1—1*s.* 6*d.*	Failed to reach.	95·3	1—1*s.* 9*d.*	95·3	95·6
2—1*s.* 6*d.*	,,	95·0	2—1*s.* 9*d.*	95·1	95·7
3—1*s.* 6*d.*	95·0	95·3	3—1*s.* 9*d.*	95·4	95·5
1—2*s.* 6*d.*	Failed to reach.	95·2	1—1*s.* 6*d.*	Failed to reach.	95·3
2—2*s.* 6*d.*	,,	95·1	2—1*s.* 6*d.*	,,	95·3
3—2*s.* 6*d.*	,,	95·1	3—1*s.* 6*d.*	95·0	95·3

TABLE II.—*Immersion Temperature 98° F.*

Thermometers and prices.	Temperature shown by standard thermometer, 98° F.		Thermometers and prices.	Temperature shown by standard thermometer, 98° F.	
	½-minute readings.	2-minute readings.		½-minute readings.	2-minute readings.
1—1*s.* 6*d.*	97·6	98·3	1—1*s.* 9*d.*	98·2	98·4
2—1*s.* 6*d.*	97·8	98·0	2—1*s.* 9*d.*	97·7	98·3
3—1*s.* 6*d.*	98·0	98·3	3—1*s.* 9*d.*	Broken.	—
1—2*s.* 6*d.*	97·6	98·0	1—1*s.* 6*d.*	97·6	98·1
2—2*s.* 6*d.*	97·8	98·0	2—1*s.* 6*d.*	97·0	98·2
3—2*s.* 6*d.*	98·0	98·4	3—1*s.* 6*d.*	98·0	98·3

TABLE III.—*Immersion Temperature 100·3° F.*

Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F.		Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F.	
	½-minute readings.	2-minute readings.		½-minute readings.	2-minute readings.
1—1*s.* 6*d.*	99·8	100·0	1—1*s.* 9*d.*	99·8	100·3
2—1*s.* 6*d.*	99·6	101·0	2—1*s.* 9*d.*	99·9	100·4
3—1*s.* 6*d.*	99·6	99·9	3—1*s.* 9*d.*	99·8	100·2
1—2*s.* 6*d.*	99·6	99·8	1—1*s.* 6*d.*	99·5	100·4
2—2*s.* 6*d.*	99·4	99·8	2—1*s.* 6*d.*	99·6	100·2
3—2*s.* 6*d.*	99·8	99·7	3—1*s.* 6*d.*	99·5	100·1

TABLE IV.—*Immersion Temperature 105·3° F.*

Thermometers and prices.	Temperature shown by standard thermometer, 105·3° F.		Thermometers and prices.	Temperature shown by standard thermometer, 105·3° F.	
	½-minute readings.	2-minute readings.		½-minute readings.	2-minute readings.
1—1*s.* 6*d.*	104·9	105·5	1—1*s.* 9*d.*	105·0	105·2
2—1*s.* 6*d.*	104·6	105·0	2—1*s.* 9*d.*	104·9	105·3
3—1*s.* 6*d.*	104·7	105·0	3—1*s.* 9*d.*	104·2	105·3
1—2*s.* 6*d.*	105·2	105·1	1—1*s.* 6*d.*	104 8	105·6
2—2*s.* 6*d.*	105·2	105·0	2—1*s.* 6*d.*	104·7	105·6
3—2*s.* 6*d.*	105·2	105·1	3—1*s.* 6*d.*	104·9	105·5

On the whole, the results show that for practical clinical purposes the thermometers gave fairly accurate readings. It is interesting to note, however, that at the temperatures

of 100·3° F. and 105·3° F. the readings in many instances were closer to the actual truth as shown by the standard thermometer when two minutes observations were made. The lesson of this appears to be that for quite accurate readings it would be better to leave the half-minute thermometer in position for two minutes rather than half a minute.

"The fashion of the day," writes a correspondent to us this week, "sets towards 'half-minute' thermometers; the old-fashioned massive type which required five minutes incubation has been practically ousted from the market. A great many of these so-called 'half-minute' thermometers do not really give true readings in that short space of time, though they may be perfectly reliable after longer incubation." This view receives confirmation in the experiments we have undertaken, and our correspondent records some observations which prove the truth of his statement.

On the other hand, a thermometer may read too high if left too long, as the following observation shows. The temperature of the water was 100·3° F. according to the standard thermometer; a clinical thermometer (half-minute observation) gave exactly 100° F. on a half-minute observation, but the reading was 100·8° F., after five minutes observation. It will be noted also that certain of the thermometers failed to record as low as 95° F. after 30 seconds, which is probably not important so long as they recorded accurately above this point. With a two minutes immersion the mercury column reached the point.

It is stated also that the accuracy of a thermometer may be impaired by using it after it has been exposed to the cold. The following table shows that with the particular thermometers tested their accuracy of recording was not seriously affected after they had been exposed to temperatures respectively of 40° F. and 50° F.

TABLE V.—*Test of Thermometers left in the Cold (40° F. (1) and 50° F. (2)).*

Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F. ½-minute readings.		Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F. ½-minute readings.	
	(1)	(2)		(1)	(2)
1—1*s.* 6*d.*	100·1	100·2	1—1*s.* 9*d.*	99·9	100·0
2—1*s.* 6*d.*	99·9	99·9	2—1*s.* 9*d.*	99·6	100·2
3—1*s.* 6*d.*	100·0	100·1	3—1*s.* 9*d.*	Broken.	—
1—2*s.* 6*d.*	99·9	99·9	1—1*s.* 6*d.*	100·2	100·2
2—2*s.* 6*d.*	99·8	99·8	2—1*s.* 6*d.*	100·0	100·1
3—2*s.* 6*d.*	99·8	99·9	3—1*s.* 6*d.*	100·0	100·1

In regard to the importance already referred to of shaking the column of mercury right down as far as it will go before making an observation, the following results are of interest. The thermometers here showed a starting point of 97° F. In other words, they were not completely shaken down.

TABLE VI.—*Starting Point of Thermometers 97° F.*

Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F. ½-minute reading.	2-minute readings.	Thermometers and prices.	Temperature shown by standard thermometer, 100·3° F. ½-minute reading.	2-minute readings.
1—1*s.* 6*d.*	100·2	100·3	1—1*s.* 9*d.*	100·4	100·4
2—1*s.* 6*d.*	Broken.	—	2—1*s.* 9*d.*	100·4	100·4
3—1*s.* 6*d.*	100·3	100·3	3—1*s.* 9*d.*	Broken.	—
1—2*s.* 6*d.*	100·0	100·0	1—1*s.* 6*d.*	100·1	100·1
2—2*s.* 6*d.*	100·0	100·0	2—1*s.* 6*d.*	100·3	100·3
3—2*s.* 6*d.*	100·3	100·3	3—1*s.* 6*d.*	100·3	100·0

According to these results the omission to "shake down" the column below 97° F. before making an observation did not appear to impair the accuracy of the record. For really accurate observations, however, the 30 seconds thermometers give, generally speaking, more satisfactory results when they are incubated for more than 30 seconds, and according to the above experiments an incubation of a period of two minutes records the practical truth.

So far the results show no startling discrepancy, but the inquiry is by no means complete. We hope to publish the results of a similar series of experiments made with cheap instruments. In the meantime it is pleasing to record that the instruments procured from certain well-known makers have proved reliable for all practical purposes.

METROPOLITAN ASYLUMS BOARD.

Proposed Increased Remuneration of Assistant Medical Officers.

THE Metropolitan Asylums Board on Nov. 1st considered proposals in connexion with the salaries assigned to assistant medical officers in the Asylums service. The Asylums and Finance Committees referred to the difficulty which for some time past had been experienced in obtaining assistant medical officers. This experience was not confined to the Board, but was general throughout the country, and was due in part to fewer entries at the medical schools and, to a greater extent, to recent legislation, which had opened out a wider field of employment to medical men. While there had been a general increase in the salaries offered to assistant medical officers in asylums throughout London and the country the Board's rates of remuneration compared unfavourably with those prevailing in the London County Council and Home Counties asylums. It was proposed that the scale of remuneration of these officers should be increased, and the following table showed the present rates paid and the revised rates suggested:—

Grade of assistant medical officer.	Present scale. £	£	£	Proposed scale. £	£	£
Senior	250 ...	10 ...	300	300 ...	15 ...	360
Second	180 ...	10 ...	200	210 ...	10 ...	250
Third and fourth...	150 ...	10 ...	170	180 ...	10 ...	200

Note.—All with the emoluments of board, lodging, and washing. The increments are annual ones.

The Finance Committee concurred in the proposals on the understanding that the increased remuneration would cover any extra services that might be rendered under the National Insurance Act (services which were light and, in the asylums, would be a diminishing quantity).

The Board decided to make the increases in the scale of remuneration.

The Principal Medical Officer of the Board.

The General Purposes Committee reported that it had received an application from Dr. H. E. Cuff, the medical officer for general purposes, for a reconsideration of his position and the salary attached thereto.

Dr. Cuff was appointed under the designation of medical officer for general purposes in February, 1908, and since that date had been remunerated at the rate of £850 per annum. Over five years having now elapsed the committee thought it desirable to review Dr. Cuff's position on the Board's staff and the duties and responsibilities attached to his position. There could be no doubt that these had materially increased since the appointment was made. Dr. Cuff now took part in every branch of the Board's work, and was called upon to advise upon reports and requests received from all sources, including those from outside authorities, as well as those made to committees and subcommittees of the Board. His work covered important questions of institution administration, of arrangements of accommodation, and of treatment of diseases, including those dealt with by the Board and those which it was suggested should be received for treatment. The committee was of opinion that the position which Dr. Cuff in fact occupied of principal medical adviser to the Board was very indistinctly recognised by his existing title, and that it would be in the Board's interest to attach to the post a designation which would strengthen Dr. Cuff's position and attach more significance and weight to his reports, many of which the Board found it desirable to issue to other bodies. The title principal medical officer should therefore be used in future.

With regard to the remuneration the committee was satisfied that considerable economies had been effected as a

consequence of Dr. Cuff's advice and reports, especially in such matters as dietary of patients and purchase of goods, and this, coupled with the increase in work referred to, justified some addition to the present salary. The committee suggested an increment of £50 per annum and pointed out that even with this the post would not be so remunerative as that of many of the medical superintendents, who had the opportunity of adding to their incomes by students' fees.

The committee recommended:—

That, subject to the sanction of the Local Government Board, the title of Medical Officer for General Purposes be altered to that of Principal Medical Officer, and that the remuneration attached to the post be increased from £850 to £900 per annum.

This was agreed to.

THE FESTIVAL DINNER OF THE LONDON LOCK HOSPITAL.

THE festival dinner of the London Lock Hospital and Rescue Home was held at the Whitehall Rooms of the Hotel Métropole on Nov. 4th, when the Duke of DEVONSHIRE presided. Covers were laid for more than 100 persons, and the company present included Lord Kinnaird (treasurer and chairman of the committee of management), Sir Thomas Barlow, Sir Richard Douglas Powell, Sir Malcolm Morris, Sir Francis Champneys, Sir Arthur Downes, Sir John Collie, and Sir Alfred Pearce Gould.

The loyal toasts having been duly honoured, the CHAIRMAN, in proposing the toast of the evening, "Prosperity to the London Lock Hospital and Rescue Home," said that all present had met with a sense of the need for doing something towards dealing with a great national and social evil. The London Lock Hospital, he believed, was the only one of its kind throughout Great Britain, and it was one which, for obvious reasons, was not talked about publicly as were other institutions which ministered to the suffering. It was called into existence to grapple with a very serious question; the work already done had been justified, and the work which remained to do was enormously important. To-day they had met under circumstances which could not have been contemplated a short time ago. The nature of the evil which had to be confronted had been within the last few months very vividly and painfully brought to the notice of the public, and many present must be viewing with satisfaction the result of their efforts. A great step forward had been taken by the State in the appointment of the Royal Commission to inquire into the prevalence and prevention of venereal diseases, and he believed that it would be possible by concerted action, if not to exterminate them, at any rate to prevent much of their evil effects. Any information that the Lock Hospital possessed which would help the Commission would be placed at the disposal of that body by the staff of the institution. The evil was not merely a national or social one, but an international one of far-reaching importance. With due restriction on his words, he ventured to say that any help extended to the hospital in a financial way must be regarded not only as an act of generosity but as an investment as well; for, after all, could there be any better investment than the security of national health? The probable effect which the lessening of the prevalence of venereal diseases would have upon the rates must be remembered in this connexion, while already the institution for which he was pleading had done much in this direction. If the work of the Lock Hospital were better known he was sure that greater assistance would be given to it. The institution had hitherto been kept going by voluntary contributions—it had been in existence some 167 years—and he asked whether the present generation was less willing than its predecessors to take its fair share of responsibility.

The Chairman coupled with the toast the name of Lord KINNAIRD, who in his reply congratulated the medical profession on the great work that they had done, and said that the institution of which he was the treasurer required at least £9000 to make effective the work of medical science. He was glad that the conspiracy of silence with regard to the particular diseases to cure which the hospital owed its existence had ceased. From its very inception members of the Royal Family had shown their readiness to help the institution which was now in great need owing to the increased demands made upon it. It had been necessary to build a new children's ward, a nursing home, and an out-patient department in Dean-street, as well as a new male hospital, which was just being completed. It was for these reasons that the hospital was in debt, and he confidently looked to the public for the help so urgently needed.

Sir THOMAS BARLOW, in proposing the toast of "The Medical Staff," said the hospital had always been fortunate in securing men in the highest rank of the profession, and it had never been better served than it was at the present time.

Mr. J. ERNEST LANE, in reply, said he believed that the hospital was productive of as much good to the community as any other general hospital in the metropolis or even in the United Kingdom, or perhaps more so.

The toast of "The Visitors" was proposed by Mr. E. PARKER YOUNG and responded to by Sir A. PEARCE GOULD who pointed out the need of a special hospital to deal with a terrible disease.

The toast of "The Chairman," proposed by Mr. J. F. W. DEACON, brought the proceedings to a close.

During the course of the evening the secretary announced a total collection as the result of the dinner of £5430, including the Duke of Devonshire's list of £2487 and Lord Kinnaird's list of £1078.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8805 births and 4754 deaths were registered during the week ended Saturday, Nov. 1st. The annual rate of mortality in these towns, which had been 14·3, 13·6 and 13·1, per 1000 in the three preceding weeks, increased to 13·9 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 13·7, against 13·8 per 1000 in London during the same period. Among the several towns the death-rate ranged last week from 5·9 in Southend-on-Sea, 7·0 in Enfield, 7·6 in Ipswich, 7·9 in Walthamstow and in Carlisle, and 8·1 in Darlington, to 18·3 in Warrington, 18·4 in Walsall, 18·9 in South Shields, 19·1 in Oldham, 21·0 in Cambridge, and 21·1 in West Bromwich.

The 4754 deaths from all causes were 262 in excess of the number in the previous week, and included 509 which were referred to the principal epidemic diseases, against 743 and 536 in the two preceding weeks. Of these 509 deaths, 322 resulted from infantile diarrhœal diseases, 51 from diphtheria, 49 from measles, 45 from whooping-cough, 24 from scarlet fever, and 18 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·5, against 2·2 and 1·6 per 1000 in the two preceding weeks. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 769, 601, and 407 in the three preceding weeks, further declined to 322 last week; of this number 94 were registered in London, 26 in Birmingham, 20 in Liverpool, 14 in Manchester, 11 in Hull, 10 in West Ham, and 9 in Sheffield. The deaths referred to diphtheria, which had been 44, 49, and 38 in the three preceding weeks, rose to 51 last week, and included 10 in London, 3 each in Devonport, Birmingham, Liverpool, and Manchester, and 2 each in Oldham, Leeds, Hull, and Sunderland. The fatal cases of measles, which had averaged 27 in the four preceding weeks, rose to 49 last week; 7 deaths occurred in London, 6 in Stoke-on-Trent, 5 in Bradford, 3 in Leicester, 3 in Stockport, and 3 in Sheffield. The deaths attributed to whooping-cough, which had been 39, 32, and 27 in the three preceding weeks, rose to 45 last week, and included 7 in London, 4 in Liverpool, 3 in Birmingham, and 3 in Oldham. The deaths referred to scarlet fever, which had been 23, 16, and 24 in the three preceding weeks, were again 24 last week; 4 deaths were registered in Birmingham, 4 in Manchester, 4 in Sheffield, and 3 in Newcastle-on-Tyne. The fatal cases of enteric fever, which had been 24, 20, and 13 in the three preceding weeks, rose to 18 last week, and included 2 each in London, Derby, Bolton, and Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals,

which had steadily risen from 2112 to 3445 in the eight preceding weeks, had further increased to 3580 on Saturday last; 534 new cases were admitted during the week, against 484, 575, and 530 in the three preceding weeks. These hospitals also contained on Saturday last 1193 cases of diphtheria, 168 of whooping-cough, 79 of enteric fever, and 71 of measles, but not one of small-pox. The 1229 deaths from all causes in London were 45 in excess of the number in the previous week, and were equal to an annual death-rate of 14·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 176, 151, and 178 in the three preceding weeks, further rose to 207 last week, but were 67 below the number registered in the corresponding week of last year.

Of the 4754 deaths from all causes in the 96 towns, 156 were attributed to different forms of violence and 359 were the subject of coroners' inquests. The causes of 25, or 0·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 59 other smaller towns. Of the 25 uncertified causes of death, 6 were recorded in Birmingham, 3 in Liverpool, 2 in Hastings, and 2 in Blackpool.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1062 births and 635 deaths were registered during the week ended Saturday, Nov. 1st. The annual rate of mortality in these towns, which had been 14·7, 13·9, and 14·0 per 1000 in the three preceding weeks, further rose to 14·7 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 14·4, against 13·7 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rate last week ranged from 3·7 in Clydebank, 7·6 in Ayr, and 10·5 in Kilmarnock, to 15·8 in Glasgow and in Paisley, 17·3 in Dundee, and 18 0 in Coatbridge.

The 635 deaths from all causes were 29 in excess of the number in the previous week, and included 82 which were referred to the principal epidemic diseases, against numbers steadily declining from 126 to 62 in the seven preceding weeks. Of these 82 deaths, 34 resulted from infantile diarrhœal diseases, 17 from measles, 14 from scarlet fever, 11 from diphtheria, 3 from whooping-cough, and 3 from enteric fever, but not one from small-pox. These 82 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9, against 1·5 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily decreased from 96 to 19 in the seven preceding weeks, rose to 34 last week, and included 18 in Glasgow, 6 in Aberdeen, 5 in Dundee, and 2 in Kirkcaldy. The deaths referred to measles, which had been 14, 14, and 12 in the three preceding weeks, rose to 17 last week, of which number 12 occurred in Glasgow and 2 in Greenock. The fatal cases of scarlet fever, which had been 6, 13, and 11 in the three preceding weeks, rose to 14 last week, and included 5 in Glasgow and 4 in Motherwell. The deaths attributed to diphtheria, which had been 13, 8, and 11 in the three preceding weeks, were again 11 last week; 6 deaths were recorded in Glasgow and 2 in Aberdeen. The 3 deaths referred to whooping-cough were equal to the average in the earlier weeks of the quarter, and were all registered in Glasgow. The 3 fatal cases of enteric fever occurred in Glasgow, Edinburgh, and Greenock respectively.

The deaths referred to diseases of the respiratory system, which had been 84, 80, and 92 in the three preceding weeks, further rose to 99 in the week under notice; 32 deaths were attributed to different forms of violence, against 26 and 18 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 575 births and 395 deaths were registered during the week ended Saturday Nov. 1st. The annual rate of mortality in these towns, which had been 17·1, 16·0, and 17·8 per 1000 in the three preceding weeks, fell to 17·2 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these Irish towns averaged 17·2 per 1000; in the 96 large English towns the corresponding rate did not exceed 13·7, while in the 16 Scotch towns it was equal to 14·4 per 1000. The annual death-rate last week was equal to 21·2 in Dublin (against 14·2 in London and 15·8 in Glasgow), 13·4 in Belfast, 15·6 in Cork, 17·8 in Londonderry, 10·8 in Limerick, and 11·4 in Waterford, while in the 21 remaining smaller towns the mean death-rate was equal to 18·8 per 1000.

The 395 deaths from all causes were 14 fewer than the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against numbers steadily declining from 132 to 52 in the seven preceding weeks. Of these 41 deaths, 27 resulted from infantile diarrhœal diseases, 5 from scarlet fever, 3 from measles, 2 from enteric fever, 2 from whooping-cough, and 2 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·8 per 1000; in the 96 large English towns the corresponding rate did not exceed 1·5, while in the 16 Scotch towns it reached 1·9 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily declined from 111 to 29 in the seven preceding weeks, further fell to 27 last week; of this number 14 were registered in Dublin, 5 in Belfast, 3 in Cork, and 3 in Kilkenny. The deaths referred to scarlet fever, which had been 2, 4, and 9 in the three preceding weeks, fell to 5 last week, and were all registered in Belfast. Of the 3 fatal cases of measles, 2 occurred in Dublin and 1 in Londonderry. The 2 deaths from enteric fever were recorded in Clonmel, those from whooping-cough in Galway, and those from diphtheria in Dublin.

The deaths referred to diseases of the respiratory system, which had been 54, 48, and 53 in the three preceding weeks, further rose to 61 in the week under notice. Of the 395 deaths from all causes, 118, or 30 per cent., occurred in public institutions, and 4 resulted from various forms of violence. The causes of 13, or 3·3 per cent., of the total deaths, were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·5 per cent.

THE SERVICES.

THE King has approved of the appointment of Surgeon-General A. T. Sloggett, C.B., C.M.G., K.H.S., as Director-General of the Army Medical Service, in succession to Surgeon-General Sir Launcelot Gubbins, K.C.B., M.V.O., K.H.S., when the latter vacates his position.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel James Will is placed on retired pay (dated Nov. 5th, 1913).

Brevet-Colonel C. H. Melville has been selected for appointment to hold charge of the Military Hospital at Tidworth, Salisbury Plain District.

Lieutenant-Colonel M. W. Russell, deputy assistant director of medical services to the Eastern Command, has been placed under orders for a tour of service in Malta. Lieutenant-Colonel C. H. Hale, D.S.O., in charge of the Military Hospital at Maymyo Cantonment, has been granted six months' general leave of absence home from India. Lieutenant-Colonel D. D. Shanahan, deputy assistant director of medical services to the Ninth (Secunderabad) Division, has been selected for appointment as Senior Medical Officer on board the transport s.s. *Plassy*, which leaves Bombay for Southampton on Nov. 7th. Lieutenant-Colonel H. D. Rowan has taken up duty in the Dublin District on transfer from the Military Hospital at Tidworth, Salisbury Plain. Lieutenant-Colonel J. H. Daly has been appointed to hold charge of the Military Hospital at Belfast and Senior Medical Officer of the North Irish Coast Defences in succession to Lieutenant-Colonel J. M. F. Shine, who has been placed under orders for a tour of service in India with the Southern Army. Lieutenant-Colonel R. W. Wright

has taken over charge of the Military Hospital at Mhow Cantonment.

Major A. J. Williamson has arrived home on general leave of absence from the Military Hospital at Blakan Mati, Straits Settlements. Major S. L. Cummins has taken up duty as Assistant Professor of Pathology and Bacteriology at the Royal Army Medical College. Major S. W. Sweetnam has been reverted to the Home Establishment. Major T. C. MacKenzie, D.S.O., has been selected for appointment as Deputy Assistant Director of Medical Services to the Northumbrian Division, in succession to Lieutenant-Colonel J. Will, who has been advanced to the selected list of lieutenant-colonels on the higher rate of pay. Major E. W. Slayter has been appointed Senior Medical Officer on board the transport s.s. *Dongola*, which left Bombay for Southampton on Oct. 22nd. Major A. F. Weston has arrived home on general leave of absence from Port Royal, Jamaica. Major P. S. O'Reilly, on expiration of service in India, has been appointed to the Eastern Command. Major S A. Archer has taken up duty on the Home Establishment on the expiration of leave of absence from India. Major A. H. O. Young has been selected for appointment as Civil Surgeon at Jullundur Cantonment. Major W. A. Woodside has taken over charge of the Military Hospital at Chakrata Cantonment.

Captain J. L. Wood has been appointed to the Northern Command for a tour of duty. Captain A. S. Arthur has been appointed to the Medical Recruiting Staff at Liverpool. Captain W. K. Beaman has taken up duty at the Military Hospital, Malta. Captain M. B. H. Ritchie, Captain A. M. Benett, and Captain T. W. Browne have been appointed to the medical staff on board the transport s.s. *Dongola*. Captain F. L. Bradish, Captain O. C. P. Cooke, Captain J. Du P. Langrishe, Captain G. F. Rudkin, and Captain W. P. Purdon have been appointed to the Irish Command. Captain F. L. Turner has been granted leave of absence from India, with permission to revert to the Home Establishment. Captain L. A. Andrews has been appointed to the Military Hospital at Cork. Captain W. G. Maydon has taken up duty in the Aldershot Command. Captain H. H. Blake has been selected for appointment as Surgeon to the Headquarters Staff at Peshawar Cantonment. Captain E. T. Potts has taken up duty at the Military Hospital, Cosham. Captain G. B. Edwards has been transferred from the Royal Army Medical Corps College to Leicester for duty. Captain A. C. Amy has been appointed to the staff of the Military Hospital at Agra Cantonment. Captain C. J. Coppinger has been selected for appointment as Clinical Pathologist at the Royal Army Medical College. Captain W. C. Nimmo has taken up duty at the Military Hospital, Aldershot. Captain R. T. Vivian has been transferred from the Military Hospital at the Curragh to Donard for duty. Captain T. S. Blackwell has been selected for appointment as Specialist in State Medicine. Captain G. G. Collett has joined at Quetta. Captain N. E. J. Harding has been appointed to the Cork District for duty. Captain B. Johnson has been granted leave of absence home from India with permission to revert to the Home Establishment at its expiration. Captain C. F. White has been selected for appointment as Specialist in Dermatology and Venereal Diseases, and has taken up duty at the Military Hospital, Dublin. Captain W. L. Webster has been transferred from Limerick to Nenagh for duty. Captain P. J. Marett has been selected for appointment as Specialist in Bacteriology and Prevention of Disease. Captain T. S. Coates has been placed under orders to embark at Southampton on Dec. 19th for service with the Northern Army in India. Captain E. D. Cadell has joined at Aden. Captain F. C. Sampson has taken up duty at the Royal Herbert Hospital, Woolwich. Captain H. J. G. Wells has been appointed to the Military Hospital at Cork on transfer from Poeghane Camp. Captain A. D. O'Carroll has been selected for appointment as Specialist in Physical Training and has been appointed to the Aldershot Command. Captain J. A. W. Webster has been placed under orders for a tour of service with the Southern Army in India. Captain D. T. Richardson has been appointed to the Military Hospital at Edinburgh. Captain T. C. C. Leslie has been placed under orders for a tour of service with the Southern Army in India. Captain H. W. L. Allott has been transferred from the Curragh to Newbridge. Captain E. B. Booth has been appointed to hold charge of the Military Hospital at Dundalk.

Lieutenant A. L. Urquhart has been appointed to the London District for a tour of duty. Lieutenant D. T. M. Large has been placed under orders for service with the Southern Army in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel C. A. Johnston has been appointed to officiate as Agency Surgeon (Second Class) at Mysore. The services of Lieutenant-Colonel J. Crimmin, V.C., have been placed at the disposal of the Commander-in-Chief by the Home Department of the Government of India. Lieutenant-Colonel R. H. Elliot has been granted six months' extension of leave of absence home from India on medical certificate. The services of Lieutenant-Colonel H. B. Melville have been placed at the disposal of the Chief Commissioner of Delhi.

Major L. T. R. Hutchinson, Professor of Physiology at the Grant Medical College, has been granted leave of absence home from India for one year on medical certificate. Major A. Sanderson, Civil Surgeon at Sambalpur, has been transferred. Major F. L. Blenkinsop has been granted three months' leave of absence home from India. Major J. H. Waters has been appointed to officiate as Professor of Materia Medica and Therapeutics at the Calcutta Medical College, in succession to Major J. M. McCay, granted seven months' general leave of absence home from India. Major R. W. Knox, Agency Surgeon to the Foreign Department of the Government of India, has been granted 11 months' general leave of absence home. Major C. R. Bakhle has arrived home on leave of absence from India.

Captain W. J. Fraser, on return to duty from privilege leave of absence, has been appointed Civil Surgeon at Chhindwara. Captain J. M. A. Macmillan, civil surgeon at Amraoti, has been transferred to Hoshangabad as Civil Surgeon. H.E. the Governor of Bombay has appointed Captain T. H. Gloster to officiate as Director of the Bombay Bacteriological Laboratory, vice Major W. G. Liston. Captain M. J. Quirke has been selected for appointment as Deputy Sanitary Commissioner and Inspector of Vaccination in Madras Presidency. Captain A. J. V. Betts has been appointed to officiate as Deputy Sanitary Commissioner of the Western Registration District in Bombay, in succession to Major J. L. Marjoribanks. The services of Captain E. C. Hodgson have been placed temporarily at the disposal of the Government of Madras Presidency. Captain A. J. Lee has been selected for appointment as Specialist in Radiography and Electrical Science to the Sixth (Poona) Division of the Southern Army. Captain W. R. J. Scroggie has been granted leave of absence combined with furlough for two years. The services of Captain F. W. Cragg have been placed at the disposal of the Education Department.

Lieutenant J. C. John has been selected for appointment as Specialist in Ophthalmology.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Colonel Richard Harman Luce, Territorial Force Reserve, Army Medical Service, is appointed to the Honorary Colonelcy of the Royal Army Medical Corps of the Territorial Force in the North Midland Territorial Division, vice Honorary Colonel John C. Bond, who vacates that appointment (dated Nov. 5th, 1913).

Colonel de Burgh Birch, C.B., Retired List, Army Medical Service, is appointed to the Honorary Colonelcy of the Royal Army Medical Corps of the Territorial Force in the West Riding Territorial Division, vice Honorary Colonel John D. Eddison, whose tenure of that appointment has expired (dated Nov. 5th, 1913).

1st South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Captain Alexander Weatherhead French, from the List of Officers attached to Units other than Medical Units, to be Captain (dated Nov. 5th, 1913).

THE ROYAL ARMY MEDICAL COLLEGE.

Surgeon-General Sir Havelock Charles distributed the prizes at the Royal Army Medical College on Oct. 29th, and among those present were Surgeon-General A. W. May (Medical Director-General of the Navy), Surgeon-General Sir James Porter, Surgeon-General Sir Francis Trevor and Colonel B. M. Skinner (Commandant of the College). Sir Havelock Charles, after referring to the necessity for keeping up with the progress of medical science, said that there should be no rivalry between the Indian Medical Service and the Royal Army Medical Corps; neither could progress if the other was hurt.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 1279.*)

XXVI.—DERBY: ITS INSTITUTE AND ITS WOMEN WORKERS.

THE chief grievance at Derby, as at Chesterfield, is the Approved Institute, which employs whole-time medical officers and does its own dispensing. Its official title is the Amalgamated Friendly Societies Medical Aid Association; but it is usually known as Macklin-street Institute. The women members, I am informed, who are not insured under the Act pay 1*s.* a quarter for medical attendance and medicine, and also pay 2*s.* a year for each child. Of the 4000 or so members about half are insured under the Act; and now in consequence of the new Memorandum issued by Mr. Masterman the full 9*s.* are to be received for each insured person. The institute is in no wise a national undertaking. It is an association of Friendly Societies founded by voluntary effort and private enterprise, but with the 9*s.* in part contributed from the National Exchequer it will be placed in a privileged position. The Insurance Act creates panel medical men and panel dispensing chemists, but the recent circular gives special facilities and financial advantages to institutions that compete disastrously against those on the panel. This is the case at Chesterfield more than at Derby, but to a large extent we find the same at Derby. So flagrant is this contradiction of interests that more than one person has expressed the opinion that it is a deliberate attempt to weaken the panel medical service. It has perhaps occurred to the Government that the panel medical men by joining together may become too powerful. They will be responsible for the health of 14,000,000 people, and if they did refuse to work the machine it would be impossible to replace them. This may well be considered dangerous, and the Government is represented as looking about for another basket in which to place at least a few of its medical eggs. The Approved Institutes might supply this want. They might even be so developed as to become the means of creating an embryo State Medical Service. This latter suggestion, though made by several practitioners, seems to me to be too theoretical and does not fit the actual facts. The fundamental force of a State service is not the pay the State servants receive but the prestige they enjoy. Now if there is one thing which the whole-time medical officers of such institutions do not enjoy that is prestige. If we examine the history of such institutions as they existed in the days of the Battle of the Clubs, and as they still survive, fortunately in but comparatively rare instances, under the Insurance Act, a lengthy and distressing record of disappointment upon disappointment will be found, followed by dismissal after dismissal. The fact of course is that the failures in the profession very generally applied for such posts in those days and the societies they served would sometimes have fallen to pieces but for the fact that there was generally on the staff one or two really well-behaved and thoroughly competent medical officers. We do not want this situation over again; such institutions and their employees do not rank high enough in the public estimation to provide the foundation for a public medical service.

The Institutions Revive the Old Club Grievances.

Though to-day 9*s.* must by law be given annually where formerly 3*s.* 6*d.* or 4*s.* were voluntarily subscribed, it is doubtful if the medical service has in any way improved in the institutions. Is it not probable, on the contrary, that the attendance may be worse rather than better? This may be the case—owing to lack of time, if for no other reason—where the number of persons actually entitled to medical aid has greatly increased, without any corresponding increase in the medical staff. To those who know the immense number of patients who have to be seen in a very short time it may be a matter of surprise to find that so many persons have enrolled themselves as members of such Approved Institutions instead of selecting one of the panel medical men. But this is in part explained by the fact that these institutions are supported by unofficial canvassers, that each member is interested in pushing the concern to which he belongs and in which he has invested some of his savings. Commissions, it has been somewhat widely asserted, are in some instances paid to those who recruit new members. Yet while so anxious to increase their membership many of these institutions are under-staffed, a fact that is proved by the advertisements for additional medical officers. The supply of practitioners willing to accept positions not approved by the profession as a whole is much smaller than it used to be, and the institutions are more successful in recruiting members than in securing an effective and sufficiently numerous medical staff. Then there is undoubtedly a considerable amount of personal pressure exercised, in regard to which the following case occurring at one of these institutions was brought under my notice. Before the Act six members of a family belonged to the amalgamation of Friendly Societies which afterwards became an Approved Institution. Three members had to insure under the Act, and they at once profited by this to leave their old club medical man, who is now the medical officer of the Approved Institution, and select a medical adviser from the panel. When, however, the managers of the institution heard of this they refused to keep the three non-insured members, for they evidently wanted the 9*s.* from each of the three insured members as a condition for giving medical aid at a much lower rate to the three non-insured members. This seems to show that the money received from the insurance fund will in part be devoted to non-insured members. Of course, this should not be; but will and can the authorities insist on reliable proofs being given that the 9*s.* are not in part spent on those members of institutions who do not pay anything like 9*s.* a year each? Also, what will the medical officers of these institutions get? Will it be anything like the 7*s.* received by the panel medical men? It is sufficient to ask the question, and the members of the profession are indignant that these opportunities of sweating medical men should exist.

The Prestige of the Panel Medical Man.

The institutions endeavour to enrol as members insured persons on the ground that they will provide medical aid for their uninsured dependents at very low rates. To this, the reply is made that, as insured people now enjoy the great advantage of being able, for a very small sum, to select their own medical attendant, they should be prepared to pay higher rates for their uninsured dependents. This, however, is an argument that only applies to the better class practice. For instance, there is at Derby a general practitioner who lives on the edge of a very large working and labouring class district. Among these people only one out of four ever paid him his fees. Now he is receiving 7*s.* a year from quite a number of them. Nevertheless, he hardly expects these poor people to pay fees for their dependents when they never used to pay fees even for themselves. Another practitioner, who as a Poor-law medical officer attended a number of patients, now obtains 7*s.* a year from many of these people who are on his list. Thus the Insurance Act has removed the stigma of pauperism in all these cases, and this is no small benefit. Indeed, it is the sense of self-respect that needs cultivating and should be applied to every detail in the working of the Act. The patient must have that sense of dignity that will make him refuse to put up with the worst phases of contract practice, and the practitioner must have too great a respect for his profession to tolerate conditions which may cause him to attempt to do the work in a hasty and degrading manner. That is how these institutions must be fought. The panel medical man must prove his superiority by freedom from the abuses associated with club practice, and now revived in connexion with approved institutes. In such an endeavour the Government should lend its assistance. The Insurance Commissioners are there to see that the best medical service is provided, so they should support in preference those practitioners on the panel. The services provided at institutions are rarely good enough to attract the well-to-do and better educated among the insured public, and this tendency to avoid the institutions should be encouraged. At Derby and Chesterfield several practitioners urged that it was their duty and in keeping with their better interests to make every endeavour thoroughly to

satisfy their panel patients, thus keeping them from the institutions. It is also better to defer discussing the position of uninsured dependents till the popularity of the panel medical men is well established, when it will be much easier to discuss terms. At present many persons remain in the institutions, here and elsewhere, because they enjoy good health, and they think that if they were ill they would send for the nearest practitioner and pay him the usual fees. These indolent persons, who very generally represent from the insurance point of view excellent lives, would be more serviceable if inscribed on the lists of the panel medical man.

Useful Statistics at Derby.

At the last Census the population of Derby was 123,410. Actually the Insurance Committee has duly tabulated and filed all the necessary details concerning 42,000 insured persons, but by the time the last available person is enrolled the number will be about 44,000, representing a good third of the entire population. Here, as at Nottingham, a very large proportion of the workers are women. But, unlike that town, and in fact any other place where I have made the inquiry, the clerk of the Derby Insurance Committee has kept separate records for men and women, and was therefore able to give at once positive figures, the proportion of women insured being 41 per cent. The clerk felt certain that sooner or later the Government would ask for such figures, and it was much easier to start the record from the beginning than to try to work out the comparative figures afterwards. At Nottingham, without any figures to go upon, it was suggested that 40 per cent. of the insured were women. Very strong opinions were expressed at Derby that the proportion was under-estimated, it being obvious that there were more women workers at Nottingham. As it is now positively proved that the proportion is 41 per cent. at Derby, it may be as high as 50 per cent. at Nottingham. This is a most serious matter from both the financial and medical point of view, as women entail a much greater drain on the funds. The women at Derby work at printing and in mills for hosiery, surgical bandages, and lace making. The wages are about 10 to 15 per cent. lower than the Nottingham standard, and there are a great number of women at Derby who only earn 7*s.* 6*d.* a week. The proportion of sickness among women workers is high, especially where they are not living with their families, as the Approved Societies have found out, much to their concern. There are 46 medical practitioners on the panel, including the three medical officers of the Medical Aid Institute. Of the insured persons about 2000 have not yet selected a medical man. No official complaints have been made concerning either the practitioners or the chemists. The latter received 80 per cent. of their claims for the first quarter of the year, but were paid in full for the next two quarters, and at the end of the year they will receive the balance due to them from the first quarter. To do this, however, it will be necessary to take the floating 6*d.* The panel practitioners have received what is due to them regularly throughout the year.

The Women Workers of Derby.

In regard to the women workers at Derby I had the advantage of a conversation with a leading female practitioner. This lady's panel list was not extensive and consisted of a large proportion of young girls. For the most part they went straight to her very soon after they were insured. The Act, she thought, would be of great benefit because it enabled those on the panel to detect and to check anæmia in its early development. Formerly these patients never sought for medical advice or treatment till they were quite ill. My informant had been attached for many years to a large provident dispensary, and had there treated more than 1000 women and children. This enabled her to obtain a good insight into the conditions of life among these women, most of whom were spinsters. She had but little purely gynæcological work to do, but gonorrhœa was very prevalent among the young women and girl workers. This, of course, showed that the insufficient wages are supplemented by some form of prostitution. The wages are about 9*s.* 6*d.* in factories, or 1*s.* a week less than at Nottingham. Most of the unmarried workers lived with their families, but nevertheless gonorrhœa was far too prevalent among them. Many of the girls were, when thus afflicted, afraid to visit her as she gave them "a straight talk," and they went to quacks and herbalists instead, so there were probably more cases of venereal disease than she had seen, and this was indeed a most serious and disastrous state of affairs. But now owing to the Insurance Act much more light will be thrown into these dark corners of the labour world. Among the women themselves the Act is very popular.

In Derby, according to the experience of the same practitioner, there is no really abject poverty, but a low standard of living is widespread. There are many semi-respectable slums, if they may be so described. It would be difficult to find a household with a total weekly income of less than 25*s.*, and the rents for cottages range from 5*s.* upwards a week. Thus there is not abject poverty. But it is a clay soil and the land lies very low, so there are much anæmia and rheumatism. The mothers, I was told, were good in respect to feeding their infants from the breast, and there was no special trade disease, unless it be indigestion produced through bending over tables and work.

Of course, there is a sort of malingering. Women are especially tempted to combine nursing with the desire to finish arrears in housework. The other day a woman took her daughter to see my informant, and asked whether the girl was not in need of a week's holiday. The answer was prompt and sharp: "Yes, but not a week, it must be a fortnight. Also it must not be at home. A week's holiday in a slum will not do your daughter much good. She must go to a convalescent home, away in the country, where she will have good air and good food and plenty of outdoor exercise. The convalescent home will cost 8*s.* 6*d.* a week and from the insurance you will get 6*s.* 6*d.* to 7*s.* 6*d.*, so this will cost you about 1*s.* per week." Needless to say this did not meet the mother's view, for she hoped to have her daughter at home for a week to help her in the housework. Instead of getting help, she was called upon to pay a few shillings and was much disappointed, though the holiday suggested would have done good in building up the girl's constitution. Though this would cost a little money at first, it would prove economical in the long run by preventing much subsequent sickness. But it is difficult to induce both individuals and institutions to adopt such a far-sighted policy.

(*To be continued.*)

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

The Motor Exhibition at Olympia, London.

TO-DAY (Friday, Nov. 7th) the Twelfth Motor-car Exhibition at Olympia opens its doors, and should attract considerable attention, not only from medical men in search of cars but also from medico-automobilists in search of methods of adding to the efficiency and convenience of their cars. A preliminary inspection whilst preparations were in progress confirms the general opinion that the show is much like its predecessors, except that the number of exhibitors has increased. Exhibitors of British origin predominate, but Austria, Belgium, France, Germany, Holland, Italy, Spain and America each contribute. The present tendency is not so much in the way of alterations in design as in improvements in construction and material, and in attention to minor details. Certainly a striking feature of the show is the number of cars which may be said to be suitable alike for the means and for the requirements of the average medical man. It has not been possible to view with sufficient detail the many exhibits so as to publish in this number of THE LANCET a detailed account of the show; but exhibits likely to be of use or of interest to medical men will be examined and reported upon in an early issue. The chief points noted at the moment were the general increase of accessibility, a growing use of detachable wheels and rims, and a tendency to an increase in the size of tyres. A large number of makers now fit dynamos for lighting cars, and the fashion of selling the car complete in every way ready for the road has become much more universal. The modern tendency to avoid all actual labour is reflected in the provision of self-starters. As has been more than once mentioned in these notes, there are several excellent devices for this purpose on the market, working either by electricity or compressed air. The avoidance of the exertion required to

pull the starting handle round may not seem to justify the extra expense, except where the increasing class of women drivers is concerned. Anyway, those who do find the exertion of starting their cars irksome will have no trouble in choosing a trustworthy contrivance.

Prices, on the whole, are much lower, and, what is more, many of the cars, by reason of their improved efficiency, now give much better value for the money. In the matter of coachwork distinction in style is more noticeable than before, and pointed radiators, sloping bonnets, and curved dashes combine with elegance in style and tone in coachwork. The exhibition will remain open until Saturday, Nov. 15th, and the price for admission is 1*s.*, excepting on Tuesday and Thursday up to 6 P.M., when it is 2*s.* 6*d.* and 5*s.* respectively.

On the Purchase of a Car.

One of the most usual queries which the writer receives is, "What make of car do you advise for a doctor?" Naturally, it is invidious in these notes specially to recommend any one particular make, though frequently some five or six types can be suggested which will fulfil the needs of the inquirer and from which he should be able to make his choice. The one point which should be borne in mind by a medical man in search of a car for professional use is that the chief cost in the maintenance of a car is the tyre bill, and therefore he who wishes to keep his running expenses down should not get a bigger car than he can afford to keep up. The lighter the car the lower the tyre bill, and also the lower the repair bill. Mere cheapness of initial cost does not always mean low running expenses. A cheap car may prove to be an expensive one. Good design, first-class materials, and care in erection eliminate many repair bills. So it is cheaper to draw a bigger cheque at the beginning than to have to meet many expenses during the running of the car. Another point to bear in mind is the question of accessories. As a result of the American fashion many cars are now sold, to use a common term in the advertisements, "Ready for the road"—i.e., complete with hooter, lamps, hood, with side curtains and wind screen, tyre pump, jack, kit of tools, including tyre levers and Stepney or spare wheel, all of which must be had. Those who like can, of course, add such luxuries as a clock, speedometer, exhaust whistle, dash-lamp, &c. For less than £200 a light two-seater is now procurable, and one, too, that will be fairly silent, reliable, and economical. Of course, if the limit be raised to £250 or £300, a much larger choice presents itself, and a four-seater could be obtained.

The Waverley Light Car.

In the two-seater 10–12 h.p. Waverley Car, the Light Cars Company, Limited, of 115, Great Portland-street, London, W., have produced an automobile that is excellently suited to meet the doctor's demand for a medium-powered car, equipped and ready for the road, at a moderate price—viz., £225. It is always important, in the case of light cars, to distinguish between those that are built for speed only and those that are designed for accommodation. The Waverley has a London built and very roomy body, and has a particularly good spring suspension to the back wheels; also double laminated springs which are bolted direct to the back axle, and thus tie tongue rods and shackles are eliminated. I had one of these cars for a week-end test and gave it a good 150 miles sampling through London traffic and up and down some of the really severe hills round Guildford. I was impressed by the extreme smoothness of the driving effort at moderately high speeds, the freedom from engine vibration, and the flexibility. The frame is of pressed steel, and the engine is a four-cylinder monobloc with 65 mm. bore and 130 mm. stroke. The valves are all on one side, the inlet being operated by overhead rockers, with adjustments on the rods that lift the operating tongues. The crank shaft has two bearings, and the timing gears are operated by means of a spring drive, thus eliminating noise and wear. Lubrication is mechanical, with a sight-drip on the dash. A Zenith carburetter is fitted, and the ignition is by a Bosch fixed-time high-tension magneto. The cooling is by thermo-syphon and a belt-driven fan, with an efficient radiator. The clutch is of the ordinary leather-faced cone type, and three forward speeds and a reverse are operated by a gate selective sliding gear. Both the brakes act on the back axle and are worked by expanding cams inside the brake drums. As a result of my test I found the steering facile and the engine answered rapidly to the depression of the accelerator pedal. The car had a good turn of speed, and behaved throughout the trip in a satisfactory manner. The petrol consumption was over 30 miles to the gallon.

A plaint of the owner driver is inaccessibility, and many a motoring doctor has complained to me of bruised knuckles and wasted time when trying to do some small adjustment or repair. In this car the magneto can be released by undoing a thumb-screw; the undoing of another discloses the valve tappets, and the petrol jet can be taken out in a trice. The oil-tank is replenished from on top and outside the dash, and even the cardan shaft can be greased with a fair amount of comfort. I think if I were buying a car these facts would greatly influence my decision. An important point with doctors is starting the engine from the cold. I found this car to start easily after a night's rest with a sharp swing, and no special effort was needed to give that swing. I also noticed that the fittings of the car were neither cheap nor shoddy, and that these parts, which so often on low-priced cars "tell the tale," were as well made and finished as could be desired.

Starting Difficulties.

A good many letters have been received from time to time in which complaint was made of trouble in getting the motor to start from the cold. It may be healthy for the owner-driver to have to crank the starting lever for some time in the morning, but it is not a good commencement for a heavy round of visits, nor can the time be usually devoted to this exercise. All that is needed for easy starting is a cylinder full of gas, a spark to explode the gas, and a proper compression of the gas. Many carburetters have two jets—one for starting and slow running, the other and larger one coming into play when the throttle is opened. Cars thus fitted start more easily with the throttle only slightly open, as then the smaller jet is used and the suction on that will get a suitable mixture more easily. Leaks in the induction pipe joints, by admitting air, reduce the suction on the jet, and thus cause a difficulty. An easy test to see if the carburetter is giving off a mixture is to take out a sparking plug and to apply a match to the sparking-plug hole; a slight puff will then show whether the fault is with the carburetter or not. Shorting the plugs on the cylinder will reveal if the ignition is at fault. The introduction of a few drops of a mixture of petrol and ether into the cylinder through the compression tap or a sparking-plug hole will provide the needed cylinder of gas if the compression is too poor to suck it in, or the weather too cold to permit the petrol to vaporise.

Leaky Back Axles.

Occasionally oil leaks through the end of the back axle, and this is neither good for the tyres nor the appearance of the car. Fibre washers fitted inside the end of the tubular back axle casing will usually effect a cure. Some advocate using a heavier lubricant for the differential, but this I would not advise, as in many instances the heavy lubricant will not get into the inside differential casing, and as a result one of the spider pinions might become seized, with, of course, disastrous results. It is better to have to remove a back wheel, say, once every two or three months to fit a new washer, than to run this risk.

BRISTOL AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Congregation for Conferring of Degrees.

THE usual ceremony for the conferring of degrees was held in the Victoria Rooms on Oct. 22nd. It was noteworthy in several respects; there were only three medical graduates, there were no honorary degrees, and the usual tumult was conspicuous by its absence, the students preferring to vent their high spirits in other ways. They made up for their unnatural quiet a day or two later, however, by an organised attack on the premises of the Women's Social and Political Union, which are—or rather were—close to the University buildings. On the morning of the 23rd the pavilion at the University sports ground was found to be in flames,

apparently as the result of a suffragette visit; and the students, many of whom lost garments and other property in the conflagration, took their revenge by smashing the windows of the W.S.P.U. shop and stripping it of furniture, which they burnt in a bonfire in Queen's-road, a main western thoroughfare. No arrests were made.

Bristol Open-air School.

Last week the Lord Mayor of Bristol formally opened the new open-air school at Knowle, a suburb on the Somerset side. It will accommodate 65 children; at present it is financed by a voluntary committee who are appealing for support, but it is expected that in two years or so the Education Committee, who are already coöperating in various ways, will take it over completely. It is designed for weakly and anæmic children, and for those suffering from glandular tuberculosis and similar ailments. In addition to a large shed, open on the south side, in which the lessons will be given, there is provision for feeding the children and drying wet clothes. Tram fares will be provided also. It is hoped that parents will contribute to meet the expenditure wherever they can. Meantime the project for the establishment of a sanatorium for tuberculous children has been interrupted; the inhabitants of Kingswood, a district which, though virtually within Bristol, belongs for administrative purposes to Gloucestershire, have successfully petitioned their county council to stop the establishment of a sanatorium in their neighbourhood, where it had been proposed to adapt existing premises to that end.

Chadwick Public Lectures.

Dr. Leonard Hill has delivered two out of three lectures to be given under the Chadwick Trust on Heating and Ventilation, in the large hall of the University of Bristol. Admission is free to the public, and the opportunity of learning something of these important subjects from a first-class authority has been eagerly taken by considerable audiences.

Bristol Medical School Dinner.

The annual dinner of the Bristol Medical School will take place at the Royal Hotel on Nov. 18th at 7.30 P.M. The president will be Dr. P. Watson-Williams and the guest of the evening is Sir Felix Semon, K.C.V.O.

Long Fox Lecture.

The eighth Long Fox lecture will be delivered on Nov. 18th in the physiological lecture theatre of Bristol University by Professor F. H. Edgeworth, the subject being the Cranial Nerves, their Motor Nuclei and Muscle Sensory Fibres. Sir Isambard Owen, the Vice-Chancellor, will occupy the chair.

Plymouth Public Dispensary.

Dr. J. E. Cheyne Wilson has been honorary physician to the Plymouth Public Dispensary for about 17 years, and recently the committee of that institution decided to make the appointment a salaried one, and advertised the post locally. Dr. Wilson was a candidate, and it was generally presumed that he would have the position, but the committee did not elect him. They, however, appointed him honorary consulting physician, but in a letter to the secretary Dr. Wilson declined the post, stating that he could not with dignity do otherwise. A considerable amount of sympathy is felt for Dr. Wilson in Plymouth, and the *Western Morning News*, in commenting on the matter, says: "Such treatment of a medical man of blameless repute, who has rendered long and meritorious service, is not without precedent amongst Plymouth institutions, and it displays a spirit which is by no means calculated to strengthen public confidence in their management."

Medical Officer of Health of Plymouth.

Mr. Frederick Mann Williams has resigned the post of medical officer of health of Plymouth after 21 years' service, but he will still retain the appointment of medical officer of the Plymouth Port Sanitary Authority. The Plymouth sanitary committee in accepting the resignation resolved "to acknowledge the valuable and faithful services rendered to the borough by Mr. Williams."

District Medical Officership of Ilfracombe.

The difficulty which the Barnstaple board of guardians have had in filling the vacancy for the appointment of district medical officer of Ilfracombe seems as last to have been settled. The guardians recently decided to increase the salary to £100 per annum, and four candidates applied for the post, with the result that Mr. W. F. Stevenson was eventually elected. As has already been remarked in THE LANCET, if an adequate remuneration had been offered in the first instance, there would have been no trouble in obtaining applicants.

Vaccination in the West of England.

There has been a very serious decrease in the number of vaccinations performed by the public vaccinators in the West of England, and this seems to have attracted the attention of several boards of guardians, for the resolution proposed by the Blackburn board, to which allusion was recently made in THE LANCET, has been supported by many of the West of England boards, the most recent to do so being those of Honiton, Okehampton, and Crediton.

Poliomyelitis in Devonshire.

At a meeting of the Bideford town council held on Oct. 30th it was reported that there were four cases of poliomyelitis in the borough.

Nov. 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Illness of Sir Donald MacAlister.

I LEARN with regret that Sir Donald MacAlister, Principal of Glasgow University, has been somewhat seriously ill during the past week. During the last day or two his condition has improved, but it will be some weeks before he is able to attend to business.

Aberdeen School Board Health Report.

In his fourth annual report of the medical inspection department of the Aberdeen School Board Dr. George Rose, medical officer, reports that a great many of the children suffer from burns or scalds, many of them caused by the application of poultices to relieve trouble in the chest or abdomen. The number of cases of appendicitis had gone up. A growing objection to vaccination is noted, the total average of the unprotected children of all ages attending school being 3·7 per cent., and the average of unprotected children under 6 years of age rising to 8 per cent. Dr. Rose reports that footgear shows an improvement in both quality and shape; a great many of the children entering school for the first time had shoes built on natural lines. Among the older girls also pointed toes had disappeared to a large extent. As regards clothing, he finds the majority of parents ignorant of what constitutes sufficient clothing for a healthy child, and gives a list of the necessary clothing. Blepharitis is common among the children. A card giving the nature of the disease and the method of cure is given to parents whose children are suffering from this trouble. The report goes on to say that "medical inspection has shown that one-third of the children suffer to a greater or less degree from the ignorance of their parents regarding the elementary principles of feeding, clothing, and home hygiene, and that a large percentage of illness and positive disease are due to such ignorance. Indeed, it might well be said of the children as of the people of old, 'They perish for lack of knowledge.' And this could and should be remedied. A knowledge of the elements of personal and household hygiene could be as easily communicated to the children as the elements of English grammar. If the curriculum be overloaded already something of less importance must be jettisoned, for if children are to be taught anything of the laws that concern their health and well-being it must be done in school. Parents cannot teach their children what they do not themselves know."

Presentation to Sir George Beatson.

On the afternoon of Oct. 29th the superintendent and past assistants and house surgeons of Sir George T. Beatson met in the board-room of the Glasgow Western Infirmary, and presented their former master with a rose-bowl and ornaments as a recognition of their high appreciation of his services, on the occasion of his retirement from the active staff and his appointment to the honorary consultant staff of the institution.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Insurance Commissioners and the Medical Profession.

AT a meeting of the Irish Medical Committee held in Dublin on Oct. 30th the metropolitan surgeon who had been negotiating with the Commissioners attended and explained that since the notice convening the meeting to be held that day had been issued the position of affairs had entirely changed, the National Health Commissioners having expressed their willingness to meet the deputation from the Irish Medical Committee, and he laid before the committee the basis for negotiations, which was afterwards considered by the Irish Medical Committee and arranged as follows for their interview with the Commissioners:—

1. That the £91,000 will be paid to the medical profession minus working expenses, and according to a scheme to be decided on in consultation with this committee.
2. That there may be a deduction of 1*d*. per 2*s*. 6*d*. for management expenses.
3. That the moneys will be disbursed direct to the profession by the Commissioners.
4. That all present appointments are to end on Jan. 14th, the date up to which contracts have been signed.
5. That all appointments after our meeting with the Commissioners are to be made after a consultation between the Local Medical Committees, Insurance Societies, the Insurance Commissioners, and this committee. That such appointments be made from men selected by the Local Medical Committees after the precedent of Belfast.
6. That no preference is to be given to men already acting as advisers under the Insurance Commissioners.
7. That should it be found after consultation between our committee, the Irish Insurance Commissioners, and the representatives of the societies that referees must he appointed, societies demanding such officers should be asked to pay half the salary, thus freeing more money for distribution amongst the profession.

A long letter had been received from the Insurance Commissioners (*a*) asking the Irish Medical Committee to show its authority as the representative of the entire medical profession in Ireland; and (*b*), announcing further that a Departmental Committee had been appointed for the purpose, *inter alia*, of taking such evidence as may appear to them would prove helpful in the consideration of any scheme for the medical certification of insured persons, announcing that, amongst other bodies, the Local Medical Committees had been requested to give evidence before this Departmental Inquiry. To this letter the Irish Medical Committee decided to reply: (*a*) That it is the only body representative of the medical profession and medical societies in Ireland, and that it has plenary powers to deal with the question of the distribution of the grant-in-aid on a basis of 2*s*. 6*d*. per caput. (*b*) In reference to the Departmental Committee of Inquiry, it was decided to reply that the Irish Medical Committee would coöperate in placing at the disposal of the Commissioners such evidence as may assist in formulating the scheme when the Committee would be made aware of the nature of the evidence required.

Demand for a Vice-regal Commission on Housing.

Last week the Irish Government, represented by the Lord Lieutenant and the Chief Secretary, received at Dublin three influential deputations whose object was to press for the appointment of a Vice-regal Commission to inquire into the question of the housing of the working-classes in Ireland. The bodies represented were the Women's National Health Association, the Housing and Town Planning Association, and the Dublin Citizens' Association. Some of the speakers made the demand on behalf of Dublin alone, while others wished to give the Commission a wider scope. The most important facts bearing on the question were those furnished by Sir William Thompson, Registrar-General. He compared the condition of Dublin with that of certain other large cities. In Dublin in 1911 there were 21,133 one-room tenements containing a population of 69,000; in Bristol, a city of nearly equal population, there were only 3700 one-room tenements, containing 5000 persons. The respective percentages of those living in one-room tenements to the total population were, for Dublin 26 per cent., and for Bristol 1·5 per cent. In Liverpool the figure is 2·3 per cent.; in Edinburgh, a city which has many historical and social similarities to Dublin, 5·6 per cent. In Glasgow it is 13·2 per cent., and in Belfast 0·3 per cent. The smaller Irish towns are in much better case than Dublin. Limerick has 7·9 per cent. of its population in one-room tenements, Cork 4·7 per cent., Londonderry 3·1 per cent., and Waterford 2·9 per cent. The death-rate, the infant death-rate, and the tuberculosis death-rate are all much higher in Dublin than in the other cities mentioned. Mr. Chart gave a valuable analysis of the social and economic condition of the inhabitants of three typical tenement houses, let out to 26 families numbering 96 individuals. Most of the occupants were labourers, carters, porters, and charwomen. Few earned over £1 a week, and many said that their earnings only averaged from 10*s*. to 15*s*. a week. He concluded that 2*s*. to 3*s*. a week was as much as such a tenant could pay for housing. The replies of the Lord Lieutenant to the arguments of the deputation were sympathetic but formal, while Mr. Birrell, though he also was sympathetic as regards the magnitude of the evil, mainly devoted himself to giving reasons for preferring an inquiry by a committee of the Local Government Board to one by a Vice-regal Commission. His arguments were that the latter method of investigation would cost more money and would entail unnecessary delay. It may be said definitely that public opinion will not be satisfied by Mr. Birrell's proposals. The Local Government Board is one of the bodies which, at any rate, by sin of omission, are responsible for the present state of affairs, and the public will not be satisfied with an inquiry in merely official hands. Since the date of Mr. Birrell's reply a committee of the Local Government Board has actually been appointed to investigate housing conditions in Dublin. It is not certain that this precludes the subsequent appointment of a Vice-regal Commission. It may, however, succeed in "queering the pitch."

The Milk-supply of Ireland.

The Vice-regal Commission on the Irish Milk-supply presented a unanimous report last week. It deals with (1) the alleged scarcity of milk and (2) its purity. It is found that in the cities and large towns there is no real scarcity of milk, but there is much ignorance as to its value as a food. In the smaller towns there is a partial scarcity in milk. It is suggested that urban authorities should be empowered to contribute from the rates toward the expenses of establishing and maintaining milk depôts. As prevails, I understand, in many rural districts in England, it is in the country that there is an actual scarcity of milk. The Commission suggests that in country areas consumers should organise themselves into milk clubs, and purchase a sufficient daily supply of milk from the creameries. The use of separated milk is also recommended.

Chief Tuberculosis Officer for Belfast.

The Belfast city corporation met in committee on Oct. 28th to appoint a "chief tuberculosis officer" under their new municipal scheme, which is to involve an expenditure of £42,000 a year. The appointment is worth £600 a year. Candidates were invited to apply for the post, and there were actually 16 applicants who sent in their names and testimonials, but as a fact there were really only two candidates—Dr. Andrew Trimble (a former member of the corporation, who resigned the position to become a candidate) and Dr. F. Coates. The former was appointed by 34 votes to 16. Both were excellent candidates, but it was well known six months ago that Dr. Trimble would probably be appointed, so that considerable sympathy is due to the candidates who, in response to invitations, underwent the labour of making their applications.

Ulster Medical Society.

On the evening of Oct. 30th, in the Medical Institute, Belfast, the retiring President, having in a short valedictory speech again thanked the Fellows and Members for the honour they had done him, introduced his successor, Dr. A. B. Mitchell, who proceeded to give his inaugural presidential address on Incapacity following Injury. From his ample experience as surgical referee for the city corporation of Belfast on questions of workmen's compensation after injury, Dr. Mitchell was able to give a most practical lecture as to the duties of the surgeon in such cases.

He advised the greatest generosity to be extended to the injured worker, while at the same time the malingerer should be detected and exposed. His idea was that the injured man's doctor and the doctor of the insurance company (and this really represented the employer) should meet in consultation exactly as in any other occurrence of disease or accident, and decide on the case after discussion. Dr. Mitchell pointed out that in fractures two X ray photographs should be taken in different planes, and showed that unless this was done mistakes might arise, and he suggested that the insurance companies would be wise in their own interests to have an X ray installation fitted up and have radiographs taken. Finally, Dr. Mitchell exhibited a series of most interesting photographs which showed how much work could be done by people who had sustained great injuries to their hands. A hearty vote of thanks was passed to Dr. Mitchell for his address, which was rendered very much more interesting by an excellent series of lantern slides.

A resolution was subsequently carried to make Dr. J. Walton Browne, D.L., an honorary Fellow of the society.

A Correction.

In this correspondence last week there is an error on p. 1281, second column, four lines from bottom. The year 1900 should be *1909*. The year was given correctly in THE LANCET of Oct. 4th, 1913, p. 1025, in a note on the health of Belfast during 1912.

Nov. 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Hygiene of the Barber's Shop.

AT the last meeting of the Société de Prophylaxie Sanitaire et Morale, on the request of the Syndicat des Coiffeurs, Dr. Fouquet read a paper on the transmission of infection by hairdressers and their implements and the hygienic precautions to be recommended by the society in reference thereto. Dr. Fouquet recommended that cutting instruments should be washed in a 1 per cent. solution of carbonate of soda and wiped with a dry cloth. Brushes, combs, and shaving brushes should be freed from accumulated grease each evening by washing in ammoniated soap-water. Metallic instruments should be passed rapidly through a flame before being used again. Brushes and combs should be kept in a hermetically sealed retainer containing a saucer of 40 per cent. solution of formol. Rice powder should be applied only by means of a pad of sterilised cotton-wool, which should be destroyed at once. For the piece of alum commonly applied to cuts and abrasions in different persons powdered alum should be substituted, applied as above with cotton-wool, which should be destroyed after use. Barbers must be forbidden to sharpen their razors by stropping them on the palms of their hands. Regular customers should, if possible, have their own individual apparatus kept for their use alone. The society will be called on to consider these proposed measures and to submit them to the Conseil d'Hygiène with a view to their publication as a compulsory regulation for all barbers, to be posted in their shops. Of course, opposition to these measures is foreseen. Some time ago an attempt was made to impose the employment of a dry heat stove, heated by gas, in which scissors, razors, &c., were to be placed between their use on different persons. In practice for the most part the stove served only as a bid for confidence on the part of the customer, for the same razor and the same scissors always remained in it, while those used were spread out on a table, ostensibly having been sterilised and allowed to cool. Dr. Fouquet accompanied his report with microbiological evidence showing the need for the proposed measures. It had long been known, he pointed out, that syphilis, furunculosis, tinea, and perhaps alopecia, and other contagious diseases of the skin and scalp were transmitted at the barber's. M. Langlais had obtained from a shaving brush taken from a respectable barber's a culture containing 160,000 bacteria per c.c.; and the same observer showed that a razor before being rinsed furnished 7000 bacteria and 26,000 after having been stropped on the hand. As to the piece of alum Dr. Remlinger had obtained 66,000 bacteria per c.c. from sterilised water in which it was dissolved.

The Use of Oxygen in the Insane.

Dr. Toulouse, of the lunatic asylum of Villejuif, has made, in conjunction with his assistant Dr. Puillet, some very interesting observations in reference to the use of subcutaneous injections of oxygen in persons suffering from nervous exhaustion, and even from mental diseases. In various cases of mental confusion with agitation, excitement, and insomnia, Dr. Toulouse has obtained remarkable results. The more acute the condition the more clearly marked are the effects. In simple cases of nervous exhaustion and in epileptics he had also had good results, though less marked and more transitory. The patients themselves, on regaining reason, described the sensation of well-being and immediate relief that followed the oxygen injections. The ultimate bearing of this method cannot yet be definitely settled, but it is worthy of study, at least in those cases in which an intoxication or an infection, which the organism cannot throw off, appears able to improve under very energetic oxidation. Dr. Toulouse does not despair of the successful use of this treatment even in cases of simple mental alienation.

Infant Mortality.

The report of Professor Achard to the Académie de Médecine on the working of the inspection of children of tender years has disclosed the fact that in 1911 the deaths of young children were 20,000 in excess of the usual average. This deplorable fact is attributed to the exceptional heat of the summer, and especially to an epizootic of aphthous fever which at that time attacked the cows in some parts of France, gravely altering the quality of their milk. The same causes have, moreover, led to similar results in neighbouring countries. These causes are temporary, and the later statistics already suggest a return towards the normal mortality. Professor Achard's report also confirms the statement of M. Pinard at the Académie de Médecine that in the provinces the use of the feeding-bottle was largely replacing breast nourishment. The *loi Roussel* forbids a wet nurse engaging herself out before her own child is 7 months old. This law, in force now for 15 years, is causing the almost total disappearance of hired wet nurses. The Academy, therefore, is considering at present a proposition to reduce to four months the time during which the nurse must reserve her milk for her own child.

Death of Professor Le Double.

Professor Le Double, of Tours, died recently from accidental asphyxia with carbon monoxide, the result of a defective heating apparatus. He was born in 1848 and studied medicine in Paris. He settled at Tours, where he became surgeon to the General Hospital in 1878 and professor of anatomy at the Medical School in 1888. In 1898 he was elected a corresponding member of the Académie de Médecine. He was one of the first anatomists of his time. His innumerable dissections revealed a large number and variety of anomalies in the disposition of the osseous and muscular systems and of the veins. He also published some notable volumes on morphological and historical questions relating to medicine. His work (in conjunction with Dr. F. Houssay) on the hairy type in the human race (*Les Vélus*) was very appreciatively reviewed in THE LANCET of August 10th, 1912. He also wrote on prehistoric medicine and surgery, on Rabelais as an anatomist and physiologist, and on Bossuet as an anatomist.

Nov. 3rd.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

A Magnificent Gift to the Johns Hopkins Medical School.

THE Johns Hopkins Medical School has received $1,500,000 from the General Education Board, which draws its supplies from Mr. John D. Rockefeller. This is the biggest gift which the Board has made as yet to any one institution. The new foundation will be called the William H. Welch Endowment for Clinical Education and Research, in recognition of the great services rendered by Dr. Welch for medical education in America. The interest of the money is to be used for the salaries of the professors of medicine, surgery, and pædiatrics, their associates and assistants, and to provide the laboratories and clinical paraphernalia to enable them to carry on their

work. The salaries paid will be fixed so as to give the holders an adequate sum for comfortable living, and they will be required to resign all private practice and to devote their lives to the work of research, investigation, and teaching. It is understood that the services of the three selected professors will be available for the public in certain circumstances, but gratuitously. Dr. W. S. Halsted, the present professor of surgery, has agreed to retain his chair under the new conditions.

A Urological Clinic for Johns Hopkins Hospital.

Mr. J. B. Brady recently offered to Johns Hopkins Hospital, Baltimore, the sum of £50,000 for the establishment of a special urological clinic. The first steps towards utilising this gift have now been taken, and contracts have been awarded for the erection of the building, which will occupy three storeys with a roof garden. Dr. Hugh H. Young is to have the direction of the clinic, which it is expected will be open to receive patients within a year.

The Study of Criminology.

Steps are being taken for the organisation of a National Society for the Study of Criminology, which is to be composed of psychologists, sociologists, and medical experts. The study of criminology is becoming more widely extended, and evidences of an awakening in regard to it are forthcoming from many quarters. Among others mention may be made of the recommendations of the Committee on Criminal Punishment of the Chicago Medical Society, suggesting the separation at all times of misdemeanants from felons; the hastening of grand jury and final trials; the extension of the reformatory idea to all criminals except incorrigibles and those charged with capital offences; the appointment of an Illinois State Sentencing Committee to classify all criminals; and the arousing of the interest of the women of the State in their sisters who have undergone penal sentence, with a view to preventing their drifting in crime or vice.

A Woman Research Fellow at Yale University.

The American-Scandinavian Foundation, which was established in 1911 with an endowment of £120,000 by Mr. Niels Poulson, of New York, to foster intellectual relations between the Scandinavian countries and the United States, has established six Fellowships, to which nominations are made by the Swedish and Norwegian Governments, to enable Scandinavian scientists to prosecute research work in the American Universities. The Swedish Government has recently appointed the first woman Fellow, in the person of Miss Ellen Gleditsch, a pupil and associate of Madame Curie in Paris, to study radio-activity in the laboratories of Yale University.

Colonel Gorgas goes to South Africa.

Colonel Gorgas, of the United States Army, whose work as a sanitarian in subduing yellow fever in Cuba and later in rendering possible by sanitary measures the completion of the Panama Canal, where he is chief sanitary officer of the Canal Zone, has received leave of absence to proceed to South Africa to investigate the conditions obtaining in the mines there, where the mortality is notoriously heavy. Colonel Gorgas is a charming colleague, and will doubtless be heartily welcomed by the medical authorities in charge.

The late Dr. James Egan, of Springfield, Ill.

Dr. James Egan, who died from nephritis a little while ago in Springfield, Ill., aged 53, had served as secretary of the Illinois State Board of Health since 1897. Since 1901 he had also been a member of the Board and since 1909 its treasurer. He was an aggressive opponent of illegal practitioners of medicine, incompetent midwives, and "diploma mills." He was a native of Massachusetts but came to Illinois in 1887, and graduated in medicine at the Northwestern University Medical School (then the Chicago Medical College) in 1893. For four years he held appointments under the Chicago Health Department, becoming later secretary of the State Board of Health of Illinois. He was a first lieutenant of the U.S. Army Medical Reserve Corps. Notwithstanding a certain aggressive combativeness of disposition he made many firm and devoted friends to whom his loyal nature endeared him. THE LANCET has on more than one occasion commented editorially on the sensible and practical *Bulletins* which he issued from the Illinois State Board of Health.

Death of Professor Reginald Heber Fitz.

In the death of Dr. Reginald Heber Fitz, which took place recently from gastric ulcer, the medical profession in America loses one of its distinguished pathologists. Dr. Fitz, who was born in Massachusetts in 1842, graduated at Harvard University, and studied subsequently in Vienna, Berlin, Paris, and London. On his return to America he was appointed to the staff of the Massachusetts General Hospital in Boston and became instructor, and subsequently professor, of pathological anatomy in the Medical School of Harvard. In 1877 he became physician to the hospital, and in 1892 professor of medicine at Harvard. He did pioneer work on appendicitis and on pancreatic diseases.

Oct. 25th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

First Dominion Medical Council Examinations.

Dr. R. W. Powell, registrar, Dominion Medical Council, Ottawa, announces the results of the examinations held in Montreal on Oct. 7th. Seventy-one candidates presented themselves and 44 were successful. Eight were referred to the Council, having failed to qualify in not more than two subjects, and 19 were rejected. Most of the successful candidates were from the provinces of Ontario and Quebec. New Brunswick furnished 1, Alberta 1, British Columbia 1, and 2 were from the United States.

Winnipeg General Hospital.

A by-law will be submitted to the ratepayers of Winnipeg, Manitoba, in December for $275,000 for the purposes of the General Hospital. Recently a new wing was opened and other extensive additions made which bring the capacity of the hospital up to 478 beds. The cost of these additions approximated $605,000 on the main building, $54,000 on a nurses' home, and $14,000 on a new residence for the superintendent. Of the total amount only $450,000 have been received by the board of trustees, and as there is a mortgage of $60,000 not less than $275,000 will meet the present requirements. The provincial government will also likely be approached for a grant, as a good many patients come from different points throughout the province.

An Epidemic of Jaundice.

During the months of March and April, 1911, Dr. Malcolm Mackay, of Sherbrooke, Quebec, had 17 cases of acute jaundice under his care. Five were males and 12 females, and 13 of the total number were between the ages of 15 and 25 years. No two cases occurred in the same house. Hearing of other cases at the same time, Dr. Mackay sent a series of questions to all the other medical men in Sherbrooke and received nine replies containing details of some 82 more cases. Sherbrooke has a population of 17,000; and allowing 5 cases of every sort per annum to every 2000 according to Leslie's statistics, Sherbrooke should have had about 43 cases in the course of the year. But there were 99 cases reported in two months. In all the cases there were 34 males and 65 females. Of children under 15 years of age, there were 45 cases; 13 cases in adults over 25 years; the remaining 41 being between 15 and 25 years. More than one case in a house was reported six times by one physician, three times by another, and once by another, while a fourth had five cases in a small orphanage. The greater majority of the cases were found in one ward of the city. Dr. Mackay draws the following conclusions: The disease is infectious; gastro-enteritis is present; the jaundice is of the obstructive type characteristic of catarrhal jaundice; the disease is possibly contagious.

The Canadian Hospital Association.

The annual meeting of the Canadian Hospital Association was held in the new Toronto General Hospital from Oct. 20th to 22nd, under the presidency of Dr. H. A. Boyce, the superintendent of the Kingston General Hospital. The opening proceedings at the first session were enlivened by a discussion upon the sale of noxious drugs. One Toronto coroner averred that the sale of these drugs had increased rapidly in the city during the past few years, and called for an amendment of the Canadian criminal code to deal with this question. The President regretted in his address that hospitals were so parsimonious that they would not send their superintendents to these annual meetings. He also

advocated the standardisation of hospitals and the appointment of a hospital architect by the Government, as many hospital buildings to-day were no better than fire-traps. He thought that through faulty construction nurses were walking miles and miles more than they should. Dr. Thomas Howell, president of the American Hospital Association, submitted a paper dealing with points for inexperienced superintendents in purchasing, receiving, and distributing supplies. The paper advised the coöperation of hospitals in the buying of supplies. By this method much could be gained and nothing lost. The association seemed to approve generally the suggestion that hospitals should share in the public taxes and be put on a plane with parks and libraries in this respect. It was argued that if hospitals could be assured of half a mill rate—i.e., the thousandth part of a dollar—it would help to get rid of the ever-present deficits. The superintendent from the Protestant General Hospital, Ottawa, said that eight years ago a plebiscite was taken in Ottawa on the question of raising a tax for the benefit of the hospitals of that city and the proposal was carried by a majority of 3 to 1; and they were getting double the subscriptions to-day they were getting eight years ago. The rate was first a quarter mill, then a half, and now it is three-quarters. Dr. J. N. E. Brown, formerly superintendent of the Toronto General Hospital and now superintendent of the Detroit General Hospital, with lantern slides explained the features of a number of the greatest hospitals in the world. Dr. Brown seemed to show a partiality for the one-storey pavilions with 50 or 60 acres contiguous to the woods and fields rather than in the neighbourhood of skyscrapers. The Rev. A. S. Kavanagh, superintendent of the Methodist Episcopal Hospital, New York, said they should hail the divorcing of the training school from the hospital with great satisfaction, especially if organised on the same basis as the medical college. He criticised the trade union spirit by which the nurse's price is standardised. Dr. John A. Hornsby, Chicago, called that day blessed when medical staff officers would give their whole time to the hospital and its patients on a stated salary. Dr. E. H. Young, assistant superintendent of the General Hospital, Kingston, was elected president, and Dr. W. J. Dobbie, superintendent of the Weston Sanatorium, was re-elected general secretary.

Abdominal Cæsarean Sections.

A report of a series of abdominal Cæsarean sections by Dr. Fred. Fenton, senior obstetrician and gynæcologist to St. Michael's Hospital, Toronto, and who died in Toronto suddenly during the past summer at the early age of 43 years, appears in the October issue of the *Journal of the Canadian Medical Association*. The cases constituted a consecutive series from July, 1909, to the time of the report at the annual meeting of the Association in June last. Of the 26 cases and operations reported, 16 were done because of obstruction to delivery owing to contractions in the bony pelvis; 6 for ante-partum hæmorrhage with undilated os; 1 each for eclampsia at term, large baby, and stenosis of soft tissues. The history of one case was lost. Five cases were second operations on the same patient, and two patients have subsequently been delivered unaided. All of the children were delivered alive, and all but three left the hospital in good condition. The three who died during the first two or three days were premature. One mother died, but it is claimed her death was not due to the operation. All the operations were done before the membranes were ruptured, before any attempts at delivery per vaginam, only two or three examinations having been made.

Oct. 23rd.

TRINITY COLLEGE, DUBLIN, MONTHLY DINING CLUB.—This club exists primarily to afford more frequent opportunities than hitherto for graduates and members of T.C.D. to meet and, as already has frequently occurred, renew friendships which, formed in undergraduate days, have been interrupted for lengthened periods. The club meets in London each month from October to June, with the exception of May, in which month "The T.C.D. Dining Club" hold their annual dinner. The honorary secretary, Mr. C. T. Nicholson, 27, St. George's-court, Gloucester-road, S.W., will be glad if all members of Trinity College, Dublin, will send him their names and addresses with a view to their receiving further particulars.

Obituary.

EDWARD NETTLESHIP, F.R.C.S. ENG., F.R.S.,

CONSULTING SURGEON, ROYAL LONDON OPHTHALMIC HOSPITAL; CONSULTING OPHTHALMIC SURGEON, ST. THOMAS'S HOSPITAL, ETC.

WE announce with regret the death of Edward Nettleship, which occurred at his house at Hindhead on Oct. 30th. His death removes from the medical profession one who for many years has occupied a foremost position in ophthalmology, and one whose loss will be keenly felt by a large number of colleagues, pupils, and friends.

Edward Nettleship was born in Kettering in 1845, the fourth son of Henry John Nettleship, solicitor, of that town. He was one of six brothers, of whom four attained much distinction in their several professions, and possessed personal characteristics which marked them as exceptional men. Edward Nettleship received his early education at Kettering. He subsequently studied at the Royal Agricultural College at Cirencester and became a member of the college in 1863. He then entered the medical school of King's College, and a year or so later began to study at the Royal Veterinary College. In 1867 he obtained the diploma M.R.C.V.S. and in 1868 that of M.R.C.S. Eng. After taking the M.R.C.V.S. he obtained an appointment as lecturer at the Royal Agricultural College at Cirencester, but did not retain this for more than a year. He subsequently became a student at the London Hospital, where he was a dresser to Jonathan Hutchinson. This was the beginning of a close association with Hutchinson which terminated only upon the death of the latter a few months ago.

In 1867 or 1868 he began to work especially at ophthalmology, and became a clinical assistant to Hutchinson at Moorfields Hospital. In 1870 he obtained the F.R.C.S. In May, 1871, he was appointed curator of the museum and librarian at the Royal London Ophthalmic Hospital, and held this post for a little over two years. During his tenure of the curatorship he did excellent pathological work and published several papers of merit, notably those on the vascular supply of the retina and on the microscopic changes in embolism of the arteria centralis retinæ. This latter was one of the four earliest communications on this subject in which the clinical diagnosis was confirmed by the microscope. The "Curator's Report" in Vol. III. of the Ophthalmic Hospital Reports was probably the earliest of Nettleship's writings upon ophthalmic subjects, and the beginning of a very long list which has ended only with his death.

After a few years on the staff of the South London Ophthalmic Hospital (now rebuilt as the Royal Eye Hospital) Nettleship was, in 1878, elected ophthalmic surgeon to St. Thomas's Hospital, in succession to Liebreich. This post he filled with conspicuous ability until 1895, and his name is still cherished and honoured by those who were associated with him in the hospital and medical school. For a comparatively short time he was also ophthalmic surgeon to the Hospital for Sick Children, Great Ormond-street, and some of the abundant clinical material under his observation there formed part of a valuable paper on Forms of Congenital and Infantile Amblyopia published a few years later.

In 1882, to his gratification, he returned to Moorfields Hospital as assistant surgeon, and five years later was elected surgeon to the hospital. He remained on the active staff until 1898. On his retirement he presented a sum of money to the committee of the hospital for the purchase of instruments or apparatus for pathological and physiological investigations; this fund has proved of great utility.

Nettleship was one of the founders of the Ophthalmological Society of the United Kingdom in 1881, and was its first surgical secretary. He took a deep and active interest in the welfare of the society and contributed not a little to its success. Many of his most valuable papers are to be found in the Transactions of the society. In 1895 he was elected President of the society, and served this office for two years.

In 1902 he decided to retire from private practice and left London to live permanently at Hindhead, where he had spent week-ends and holidays for many years. This retirement from active practice was but the starting point of a period of renewed activity in scientific work. Freed from the routine of a large consulting and operative

practice, he devoted himself to the investigation of ophthalmological problems, and took up very energetically the subject of heredity. During the last ten years he has accomplished a prodigious amount of extremely valuable work upon heredity in diseases of the eye, albinism, and allied subjects, and has published a series of papers, including his Bowman lecture "Upon Some Hereditary Diseases of the Eye," which are monuments to his tireless industry and to his enthusiasm in research. In conjunction with Karl Pearson and C. H. Usher he had recently all but completed a large monograph upon "Albinism in Man" (one of the Drapers' Company Research Memoirs), of which the last part is to be published before the end of the year. In 1910 Mr. Nettleship was appointed a member of the Government's "Departmental Committee on Sight Tests." The report of this committee after two years of arduous work was published in 1912. He was throughout his life a strenuous and tireless worker, and his writings upon ophthalmic subjects are very numerous; they have been published chiefly in the Ophthalmic Hospital Reports and the Transactions of the Ophthalmological Society. It is a tribute to his ability, and to the punctilious care which he always observed in the preparation of material for publication, that there is scarcely a paper which even now will not repay perusal and which has not some permanent value.

The esteem and regard in which Nettleship was universally held by his pupils and colleagues found definite expression at the date of his retirement from practice. The fund then collected for the presentation of a testimonial was, in accordance with his own desire, devoted to the establishment of a medal "for the encouragement of scientific ophthalmic work." This prize is in the custody of the Ophthalmological Society and is awarded triennially. In 1909, to the great satisfaction of all, it was awarded to Nettleship himself in recognition of his researches upon heredity in diseases of the eye.

Mr. Nettleship married in 1869 Elizabeth Endacott, daughter of Mr. R. Whiteway, of Compton, Devon, but leaves no issue.

Mr. J. B. Lawford writes: "By the death of Edward Nettleship the followers of ophthalmology have lost a leader in that branch of medicine, and one whose life and work have added lustre to his profession. His professional reputation is so well established and so world-wide that no words of mine can enhance it, but as one who has had the privilege of a long and intimate association with him I desire to contribute my quota of admiration of his professional and personal characteristics. Nettleship was a man whose high ideals and sterling character, no less than his great ability, won the respect and admiration of all who were brought into immediate contact with him. He was an indefatigable worker and a highly trained observer, and he possessed in remarkable degree the genuine scientific spirit. In all his investigations upon whatever subject he was actuated by one, and only one, desire, which was to arrive at the truth; preconceived ideas were never allowed to influence him in his search. His work in ophthalmology, as in other branches of science, was characterised by punctilious and unremitting care, and he never spared time or trouble in his endeavour to render it thorough. It is difficult to say exactly wherein his great merit as a teacher lay. It seems to me now that it was less in the actual knowledge he imparted to his pupils than in his wonderful faculty of encouraging their powers of observation and of infecting them with his own enthusiasm for and thoroughness in investigation. It is safe to say that there are few, if any, of those who worked with or under him, who do not feel as deeply grateful for his example as a clinical investigator as for his precepts as a teacher. His published work covered almost the whole range of ophthalmic science, more especially from the clinical side, and has added largely to our knowledge. It seems probable that his reputation will live chiefly by the work (work of a very high standard of excellence) on heredity, which he has accomplished during the last 10 or 11 years. The value of these labours was recognised recently by his election to the Fellowship of the Royal Society. He was engaged upon work of this kind until laid aside by his last illness, and during that illness he was distressed by the thought that he had failed to complete it.

Of Mr. Nettleship's personal characteristics I find it difficult to write without seeming exaggeration. An unusually broad-minded man, of scrupulous integrity, incapable of a mean or ungenerous action, thoughtful and considerate of others, he was as much beloved by those who knew him well, as he was respected by those who had a less intimate acquaintance with him."

HENRY FRANKLIN PARSONS, M.D. LOND.,

LATE ASSISTANT MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

A WELL-KNOWN figure in the public health service has passed away in the person of Dr. Henry Franklin Parsons, who died on Oct. 29th at his residence in Croydon. He was a Somersetshire man, the son of the late Joshua Parsons, surgeon, of Frome, and was one of 13 children, several of whom displayed evidence of unusual mental attainments.

He was educated at St. Mary's, and after obtaining numerous honours in the University of London examinations obtained his degree of M.D. in 1870. From the first his bent was towards public health, and he obtained the appointments of medical officer of health to two urban and two rural districts in Yorkshire—i.e., Selby and Goole. These posts gave him the unusual advantages of studying sanitation in both country and town, and also the needs of a growing district, since the town of Goole was at that time developing from little more than a village to become an important seaport of nearly 20,000 population. With these advantages, aided by close study, he had no difficulty in obtaining the gold medal in the examination for the public health degree of the University of London in 1876, and also in the same year the D.P.H. of the University of Cambridge. Three years later, on account of the profound knowledge displayed in his reports on the sanitary circumstances of the districts in his charge, which were duly submitted to the Local Government Board, he was invited to become a medical inspector under that Board, and henceforward became successively Second Assistant Medical Officer and Assistant Medical Officer and Inspector for General Sanitary Purposes, finally retiring at the age limit two years ago. He was thus brought in contact with such men as the late Sir George Buchanan, the late Sir Richard Thorne Thorne, and Sir William Power, successive Medical Officers to the Local Government Board. By them he was inspired in his devotion to public health, and to them his profound and wide knowledge was of the greatest service. Parsons belonged to a class of men whom the rise of specialism has extinguished, men like the late Dr. Bristowe, Dr. Alfred Carpenter, and Dr. Frank Payne, who had a grasp of science in general as well as of medicine. Thus, Parsons perhaps had a wider knowledge of the geology and botany of these islands than most professors of these sciences, as well as of natural philosophy in its widest sense. In acquiring this knowledge he availed himself to the fullest extent of his constant travelling over the country in the course of his duties as an inspector. In this way, favoured by the possession of a marvellously retentive memory, he became literally a mine of information. Not only on public health but on almost any subject information was more quickly obtained by going to him than in seeking it in books. His knowledge of physics was really great; it enabled him to take up scientific inquiries, such as that which he made on disinfection, in a manner that would not have been possible for many medical men, however well equipped professionally in general or special lines.

During his long period of work in association with the Local Government Board Parsons brought out a number of reports on various subjects. Perhaps the most important were his two reports on the influenza epidemic of 1889–92. These embraced an account of the epidemic in all its aspects, and form a classic on the subject which will be referred to as long as this plague continues to exist. Of great importance also was his recent report on isolation hospitals, a subject in which he took great interest and on which he was the acknowledged authority. Important reforms with which he had much to do were the introduction of slop-closets, on which he wrote a special report, refuse destructors, and disinfecting apparatus. Slop-closets were a great improvement on the midden privy which they replaced at that time when water-supplies were generally inadequate, although at the present time, with recent improvements which have been general in the matter of water-supply, they are rarely needed. He was also greatly interested in the prevention of nuisance from the removal of

manure and refuse from towns into rural districts, and prepared a report on the subject. He reported on the manufacture of rag-flock and the possible spread of infectious disease by this or other products of woollen rags. He prepared a memorandum on the sanitary requirements of cemeteries, also on disinfection by heat. His great knowledge of geology caused his advice to be much sought after in questions of water-supply, and he reported on geological considerations in relation to public health and sanitary administration. Having been brought up in an agricultural district he was greatly interested in the housing and other conditions affecting the agricultural labourer. He was a Fellow of the Geological Society, and for two years in succession President of the Epidemiological Society of London. His presidential addresses, on Half a Century of Sanitary Progress and its Results, and on the Comparative Mortality of English Districts, were of great interest and dealt with wide problems. He also contributed papers on the Etiology of Diphtheria and on the Distribution of Mortality from Influenza.

Parsons was of retiring disposition and reserved in manner. He did not readily make friends, seeming at first to repulse all advances, especially in the case of non-professional acquaintances; yet he had a large circle of firm friends, to procure information for whom he would take endless trouble, while he was generous and good natured to an extreme degree. It may be said of Parsons that his function was to supply knowledge to his colleagues and to the whole of the sanitary services of the country. For this purpose he held conferences innumerable with representatives of sanitary authorities and with medical officers of health, both at the central office in Whitehall and in the provinces. In this way he probably influenced the sanitary development of this country more than anyone else, but he was consequently involved in a mass of routine work, which left no leisure for preparation of personal works, his whole time being devoted to the requirements of his department. Hence he was not associated with any great movement which would appeal to the public, and, as is unfortunately the usual case under these circumstances, he received no public recognition or honour.

He was hoping on his retirement, which took place two years ago, to write several works embodying the results of his profound experience, but this was not to be. Soon after this symptoms of new growth in one of the bones were followed by amputation of the leg. In an unfortunate fall he fractured the stump of the leg, and finally cerebral symptoms with coma, probably due to secondary growths, ensued. At the time of his death, however, he had completed a work on hospitals which is in the press, and had commenced other works. His wife died recently, but he leaves two daughters, who are married, and who were with him at the end.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. H. J. Garrigues, formerly a professor of midwifery in New York.—Dr. Baudon, formerly Deputy for the Oise.—Dr. E. Klebs, formerly professor of pathological anatomy in the University of Zürich.—Dr. B. Steuer, sanitary councillor, Berlin.

RURAL HOUSING IN THE COUNTY OF SOMERSET.—The medical officer of health of Somerset, Dr. W. G. Savage, in his annual report states that there is a shortage of houses throughout the whole county.

DONATIONS AND BEQUESTS.—The late Mrs. Caroline Conradine Sophia Dickinson, of Boscombe, has left by will £1000 to endow a "James Bathgate Dickinson" bed in Manchester Royal Infirmary, and £500 to endow a "James Bathgate Dickinson" cot in the Royal Victoria and West Hants Hospital, Bournemouth. Subject to other bequests the testatrix left a fund of £8180 16*s.* 6*d.* upon trust to provide four "James Bathgate Dickinson" scholarships for medical students at the Manchester Royal Infirmary and at Owens College, Manchester, one-fifth for a scholarship in anatomy, one-fifth for a scholarship in pathology, one-fifth for a research scholarship in surgery, and two-fifths for a research scholarship in medicine. Subject to sufficient residue she left £1800 upon trust as to one-half for a scholarship in chemistry, tenable at the Stalybridge Technical School, and as to one-half upon trust for Epsom College for purposes other than building as the governors decide upon.

Correspondence.

"Audi alteram partem."

MOONLIGHT AND DECAY.

To the Editor of THE LANCET.

SIR,—In reference to your interesting annotation under the above heading which appeared in THE LANCET of Oct. 25th, it is worth noting that the idea that moonlight brought about or assisted putrefaction is at least as old as Plutarch. In the last "problem" of the third book of the Convivial Questions[1] the story is told of how Euthydemus of Sunium entertained his friends with a large wild boar. When the guests expressed admiration at its size, Euthydemus replied that he had had another much bigger, but that being brought in from the country under the moon it had gone quite rotten, and he was absolutely at a loss to understand why this should happen; he should have thought that the sun being so much hotter than the moon would have made meat putrefy the sooner. Moschion, the physician, argued that putrefaction is a liquefaction of the flesh, and that putrefying bodies get moister and moister. Gentle heat stirs up the humours, but does not prevent them from working; a high degree of heat, on the other hand, dries up the flesh. Thus, the gentle heat of the moon promoted moisture and so putrefaction, while the sun by his heat shrivelled and drew out moisture from bodies.

Plutarch, however, argued that flesh putrefied more quickly in the summer when the sun was hot than in the winter when his beams were weaker, so that gentle heat could not be the cause of putrefaction. Personally, he should ascribe the effect of the moon to some quality proper to a "humour" transmitted from her, *'ιδιότητα μᾶλλον 'αἰτιατέον τοῦ φερομένου 'ρεύματος 'απ' 'αυτῆς.* Plutarch presumably knew nothing of polarised light, but apparently his theory had a basis of truth in it.—I am, Sir, yours faithfully,

Westerham, Nov. 4th, 1913. H. P. CHOLMELEY.

CLAIMS AND CONSULTATIONS.

To the Editor of THE LANCET.

SIR,—Allow me to reply briefly to Dr. J. M. Clarke and Mr. M. Wilson on their remarks in THE LANCET of last week on the above subject. I am in full accord with Dr. Clarke that medical fees in medico-legal cases should be placed in the same position of safety as legal fees.

Mr. Wilson observes that I evade the question as to the legality of demanding a medical fee for being present when an examination is being made. I will be quite candid and acknowledge that I am not aware whether the matter has been ever decided in the courts. If the point has not been decided I am quite prepared to arrange for a test case to be brought forward.

We are living in very medico-legal times. The past seven years has seen the commercial success of the motor-car, the taxicab, and the motor-bus. "Running down" cases have become one of the features of the High and county courts. The Workmen's Compensation Act and the National Health Insurance Act have come into force during the same period. If the legal profession did not predominate so much in Parliament the interests of the medical profession might have been much better protected.

I am, Sir, yours faithfully,

Castle-court, E.C., Nov. 4th, 1913. J. J. SCANLAN.

THE VALUE OF THE TREATMENT BY "FIXATION ABSCESS."

To the Editor of THE LANCET.

SIR,—Having urged my colleague, Dr. de Lostalot, to publish some cases of treatment of infections by "fixation abscess," a paper you were good enough to publish in your issue of Oct. 18th, p. 1118, I send you herewith a short summary of a case of purulent bronchitis and pneumonia in which I have reason to think my patient's life was

[1] Teubner Ed. Moral. Plutarchi, vol. iv., p. 132.

probably saved as a result of that treatment. Mrs. X, aged 70, was taken ill at her residence last spring with an attack of influenza—a disease she is very susceptible to. This quickly developed into a bronchitis with the expectoration of much purulent matter. Between the fifth and sixth day definite signs of consolidation in the middle and posterior portion of the left lung appeared, a sufficiently grave symptom in a patient of her age taken alone. In spite of active treatment and excellent nursing more grave symptoms ensued within the next two days. Dr. de Lostalot kindly saw the case with me, and suggested that I should try the effect of a "fixation abscess," a treatment I had no experience of. Within an hour or so I therefore injected 2 c.c. of pure turpentine under the skin in the upper and outer third of the thigh.

On the third day a faint blush appeared over the site of the injection, and improvement in symptoms began from that time. On the fourth day the abscess was opened and treated with a Bier's cup, as described by Dr. de Lostalot in his paper referred to above, and within three or four more days my anxiety as to my patient's life had been removed and she made an excellent and fairly rapid recovery, and this in spite of two troublesome attacks of tachycardia, when her pulse ran away at 130 for from 12 to 18 hours, this latter curious symptom she having been occasionally subject to for many years.

Personally, I have no doubt of the remarkably good effect of the fixation abscess treatment in the above case, and I shall certainly immediately resort to the same simple remedy in any similar condition I may come across.

I am, Sir, yours faithfully,

Biarritz, Oct. 26th, 1913. DOUGLAS D. MALPAS, M.D. Aberd.

THE RESULTS OF "CONTAGIOUS DISEASES ACTS."

To the Editor of THE LANCET.

SIR,—Now that a Royal Commission has at last been appointed to inquire into the problems of venereal disease many thoughtful people are asking what steps can be taken to safeguard the public health in this direction. It is often assumed that the only possible methods are "the Continental system" (C.D. Acts), or compulsory notification, but comparatively few people seem to have much knowledge as to the results of these measures where they have been tried, or of the practical difficulties encountered. It may therefore be of interest to the general public to know that a society exists which for over 30 years has made a study of the methods of dealing with these diseases and cognate problems. The information obtained has been carefully scheduled and is open to those who desire to refer to it at the offices of the British branch of the International Federation for the Abolition of State Regulation of Vice, 19, Tothill-street, Westminster, London, S.W. The secretary is also prepared to deal with requests by post.

I am, Sir, yours faithfully,

HELEN WILSON, M.D. Lond.,
Osgathorpe Hills, Sheffield, Oct. 31st, 1913. Honorary Secretary.

EYESORES.

To the Editor of THE LANCET.

SIR,—To the twentieth anniversary dinner of the Scapa Society for the Prevention of Disfigurement in Town and Country Mr. James Bryce, lately British Ambassador to the United States, wrote:—

> Will you please convey to the members of Scapa my hearty congratulations on what they have accomplished, not only in rousing public sentiment here, but in setting an example which has told powerfully in America, where a similar movement for delivering rural beauty from the disfigurements of advertising has been steadily growing and has already achieved considerable success? Some public spirited men are organising a league of persons who are to pledge themselves not to deal with the disfigurers, and it seems that the advertisers are to be frightened into making their pictorial designs less hideous. This is at least an admission of the mischief now done.

Eighteen English counties have now by-laws made under the Act of 1907 in the following form:—

> No advertisement shall be exhibited on any hoarding, stand, or other erection visible from any public highway (whether carriageway, bridleway, or footway), and so placed as to disfigure the natural beauty of the landscape.

In the later cases erections visible from railways or open water are specifically included.

Many urban authorities have also obtained power to forbid disfiguring advertisements visible from parks and pleasure promenades, and similarly to protect certain scheduled "views." Several of these authorities have also power to prohibit in residential districts hoardings exceeding 12 feet in height. This is in addition to the regulations in force in many urban districts forbidding sky signs. The Act of 1907 does not give adequate powers for the defence of villages and rural scenes (other than the open country) and of cities and towns. A Bill bringing them within the pale of appropriate regulation is in charge of Captain the Hon. A. C. Murray, M.P., and will be introduced and pressed forward in the coming session. Meanwhile, as every discerning traveller is aware, the influence of many great landlords has been invoked and exercised to exclude disfiguring advertising from the areas under their control.

It is the deliberate policy of most of the directors of Garden City and Town Planning Associations to provide against the entry of the evil by restrictive covenants in all leases. The voluntary renunciation by great firms in the motoring and cycle trade of the practice of roadside advertising is an illustration of the willingness of the directors of industry to defer to public opinion. It is believed that when the existence of the means of remedy is known all classes of the community who find pleasure in travel—notably motorists, cyclists, photographers—will co-operate in inducing local authorities to take action. The society (25, Victoria-street, S.W.) is always ready to advise.

I am, Sir, yours faithfully,

RICHARDSON EVANS,
Westminster, S.W., Oct. 28th, 1913. Chairman of Committee.

THE IDENTITY OF DR. THOMAS SPENS.

To the Editor of THE LANCET.

SIR,—The informant to whom Dr. C. Edgar Lea refers in the last paragraph of his letter, entitled "The Spens (Stokes-Adams) Syndrome," has confused Nathaniel and Thomas Spens, father and son, not a very hard thing to do as I, the great-grand-nephew of the former, have found before now. Nathaniel Spens was Raeburn's Archer.

Nathaniel Spens was the third son of Thomas Spens, of Lathallan, Fifeshire. He was M.D. St. And., 1773; License of the R.C.P.E., 1773; Fellow, 1774; President, 1794. A fine bowman, he was a "Royal Archer," that is, one of the King's Bodyguard for Scotland. He was painted by Raeburn in this uniform, and it is supposed to be that artist's masterpiece.

Thomas Spens was the son of the above Nathaniel. He was M.D. Edin., 1784; License of R.C.P.E., 1787; Fellow, 1788; President, 1803. He died at his house, Drummond Place, Edinburgh, on May 27th, 1842, being in his 79th year, and treasurer of the College.

Nathaniel, the Archer-President, was thus a cadet of the ancient house of Spens of Lathallan, which is derived from a younger son of the ancient Earls of Fife. Sir Patrick Spens, of ballad fame, who was sent by Alexander III. of Scotland in 1281 to convey his daughter Margaret to Norway to marry Eric II. of Norway, was of this family. On his way home Sir Patrick and all his crew were drowned off Aberdour. Another Patrick Spens, a cadet of this family, went to France in 1450 as one of the 24 Scottish Archer Guards of Charles VII. of France, and founded the two baronial families of France, De Spens-Destignots, Seigneurs of Destignots and St. Germains, and De Spens-Destignots, Seigneurs De Lancre.—I am, Sir, yours faithfully,

T. GRAEME DICKSON, L.R.C.P. Edin., &c.
Buxton, Nov. 4th, 1913.

ROYAL FREE HOSPITAL.—At the last quarterly meeting of the committee of management of the Royal Free Hospital, Sir E. Durning Lawrence, Bart., in the chair, it was announced that satisfactory progress had been made in the construction of the new out-patient department, and hopes were expressed that this department will be opened during the first half of 1914. It was reported that negotiations had been proceeding for some months past for securing recognition of the hospital as a centre for the treatment of tuberculosis under Section 16 of the National Insurance Act.

THE NATIONAL INSURANCE ACT.

INSURANCE AND THE ETHICAL RELATIONS OF MEDICAL PRACTITIONER AND PATIENT.

IT is a subject of complaint on the part of Insurance Committees that certificates are sometimes granted by medical men to insured patients which do not state in sufficiently full terms the nature of the disease which is the cause of the inability to work. The question of what should and what should not be placed on a certificate is a very difficult one. In some instances a certificate containing merely the statement that its subject is unable to perform the duties of his employment has been accepted, and the medical profession can bring claims that such certificates should always be accepted. At a recent meeting of the Leeds Insurance Committee the suggestion was put forward that the medical man regarded the patient as his private patient and was loth to offend him by supplying information to third parties with regard to his illness; he, indeed, considered himself precluded by the rules of professional ethics from doing so without the patient's permission. It must be remembered that the initial certificate is given to the insured person himself and not to any third parties. But it is clear that the Insurance Act contemplates the acceptation by medical practitioners of service under circumstances which in the case of their private patients do not prevail, and to practitioners not used to the requirements of club practice the system of reporting upon their patients' diseases in any way which cannot remain confidential between doctor and patient must necessarily be repellent. There is, however, one broad aspect of panel practice which should not be lost sight of at this early stage of the practical working of the Act. Either the medical man must regard himself as working for the Insurance Committee under a contract made with it, or as working for his patients under contracts made for them through the Insurance Committee's agency, and it is submitted here with some emphasis that the medical profession should consider carefully before it claims to be in the second position indicated. Reference to the case mentioned in THE LANCET of Oct. 18th, p. 1159, of Titherington *v.* Danlop will make the matter clearer. In that case a county court judge decided that a medical man on the panel was liable to a patient for the amount of fees paid to a second practitioner called in by the patient when the defendant did not respond to his summons. We have no doubt that before long an appeal upon this decision will be heard, and that the Divisional Court will be asked to say whether there is any contract between the practitioner and the patient under the Act such as will render the former directly liable to the latter for a breach of that contract. We pointed out the importance of the point raised, because in our opinion it involved the whole question of liability between medical man and patient arising out of alleged negligence, or any other supposed breach of duty. The principle that where there is no contract between two persons there is no duty which one of them can enforce against the other, may be taken to govern the matter, and the question who are the parties to the contract in insurance practice will be determined in this way. Considering that the medical men serving on the panel will be in a very unenviable position if they are liable to litigation at the suit of every patient attended by them, it becomes difficult to claim on the one hand direct responsibility to the Insurance Committee only, and on the other the same relations between practitioner and patient that exist in private practice.

THE KENSINGTON BOROUGH COUNCIL AND BACTERIOLOGICAL EXAMINATION ON BEHALF OF INSURED PATIENTS.

AS we reported in THE LANCET last week (p. 1291), at a meeting of the London Insurance Committee on Oct. 23rd a motion by Dr. H. H. Mills to the following effect was unanimously carried:—

> That it be referred to the Medical Benefit Subcommittee to inquire and report as to the facilities for obtaining clinical investigations and treatment for insured persons at the metropolitan hospitals.

The public health committee of the borough of Kensington has now consented to supply to all the practitioners on the panel in the district outfits for the collection of material in cases of suspected phthisis, enteric fever, diphtheria, and venereal disease, and to pay out of the rates for bacteriological examinations. The examinations will be made at the Lister Institute. This is a recognition that insured persons have a claim upon the public health service of the country, and indicates also a direction by which the hospitals of different areas may be brought into close touch with insurance practice in a way that may be mutually advantageous. A writer in the *Times*, alluding to this very point, has recently suggested that "an ideal arrangement would be for the hospital to be the centre for each insurance area which every doctor should feel that he could use for consultative purposes. The hospital laboratory, equipped with all available scientific apparatus for the investigation of disease (X rays, &c.), should be at the service of the doctors, who should be encouraged to take their clinical material for examination. It is in every way desirable that the doctors should be personally interested in the investigation." The suggestion is a far-reaching one, and shows that the inquiry proposed by the London Insurance Committee may have great practical results if the hoped-for coöperation of the hospitals is realised. A conference between the hospitals and the London Committee should be easily brought about, and an interchange of views and information might lead to a systematic use by the practitioners on the panel of the facilities afforded by the hospitals for scientific research, alike to the great benefit of their patients and the raising of the standard of their work. There are many things to be arranged before this position is reached, and especially must the independence of the scientific work of the hospitals not be altered by the fact that any work done in their laboratories on behalf of the insured patients would be paid for out of the rates. The geographical distribution of hospitals is also not quite perfect for such a scheme. But these are details, not insuperable bars, and to evolve a comprehensive scheme despite such difficulties would be well within the powers of a broad-minded conference.

NON-PANEL SOCIETY IN ST. PANCRAS AND ISLINGTON.

On Oct. 31st a body of between 30 and 40 non-panel practitioners engaged in practice in St. Pancras and Islington met in the Midland Grand Hotel, and after a preliminary discussion proceeded to form a non-panel society for the combined area. The following office bearers were elected:—Dr. B. G. Morison, chairman; Dr. A. F. Shoyer, 101, Tollington Park, N., honorary secretary and treasurer; and Drs. A. Bousfield, C. G. Mack, and J. F. Paul (Islington), A. Brown, G. F. Glinn, and Maccarthy (St. Pancras) members of committee. Mr. Percy B. Spurgin, who was present as a visitor, strongly advocated the necessity of confederating all such non-panel societies and non-panel practitioners in the Non-Panel Medical League now being formed, which he anticipated would be of the greatest service to the profession in the inevitable conflicts that still awaited it.

A discussion then arose as to the position of members of this society with regard to the British Medical Association. It was generally agreed that precipitate resignations of membership were not desirable, and that efforts should be made to induce reform in the policy of the Association, which was strongly disapproved. The following resolution, moved by Mr. J. N. Glaister and seconded by Dr. A. Bousfield, was carried without a dissentient:—

> This meeting of non-panel practitioners of St. Pancras and Islington expresses its profound dissatisfaction with the manner in which the British Medical Association has persistently ignored the interests of non-panel practitioners.

PROVISIONAL REGULATIONS FOR PANEL COMMITTEES AND PHARMACEUTICAL COMMITTEES.

The National Health Insurance Joint Committee, acting with the English and Welsh Insurance Commissioners, have issued provisional regulations to come into force immediately to regulate the constitution, appointment, and duties of the Panel Committees and pharmaceutical committees which are to be formed under Sections 32 and 33 of the National Insurance Act, 1913. These rules are dated Oct. 27th, 1913, and are to be cited as the National Health Insurance (Panel and Pharmaceutical Committees) Regulations, 1913. There are 32 regulations and three schedules, price 1½*d*. They provide for the election as members of the Panel Committee of duly qualified medical

practitioners of whom not less than three-fourths shall be practitioners on the panel, the electors being practitioners on the panel. Nomination papers are to be asked for by Nov. 10th, 1913, and nominations are to be sent in by Nov. 20th. Modified forms of election to secure representation of each area in a county and alternative methods of appointment other than that provided for by the regulations may be sanctioned if application is made under the regulations before Nov. 20th. The above provide for the appointment of members of Panel Committees to hold office till July 15th, 1914, and schemes for subsequent elections may be submitted by Panel Committees before March 31st, 1914. The number of members to be appointed on each panel committee is fixed by a schedule. Regulations of a similar character are made for Pharmaceutical Committees, which are to consist as to at least two-thirds of each committee of registered pharmacists, and of which the membership is to be equal to one-fifth of the Insurance Committee of the county or county borough. A group of regulations affect both kinds of committee, one of these providing for the removal of a member who fails to attend three consecutive meetings of his committee. Regulation 32 specifically assigns to the Panel Committee the duty of making on behalf of the practitioners on the panel arrangements with the Insurance Committee for the distribution amongst practitioners on the panel of those insured persons who have failed to select a practitioner or have been refused by the practitioner whom they have selected.

MIDDLESEX INSURANCE COMMITTEE: PRIVATE CHARGES MADE TO INSURED PERSONS.

The Middlesex Insurance Committee on Nov. 3rd fixed Jan. 10th, 1914, as the date for the revision of the medical list. It was reported that 1018 applications for sanatorium benefit had been received to date, 714 being from men and 304 from women. A curiosity of insurance red tape came under notice in connexion with administration of sanatorium benefit. Although it had provided an insured person suffering from tuberculosis with an open-air shelter, the committee decided to inform the Brentford board of guardians, who wrote suggesting that the committee might have supplied a blanket "as an appliance to the shelter," that as its responsibility did not extend to the relief of distress it could not supply the blanket. On the consideration of the report of the Medical Service Subcommittee discussion arose as to charges to insurance patients. The subcommittee recommended that a practitioner be informed that the committee viewed with disapproval the practice of charging panel patients extra fees.

Mr. H. B. Brackenbury moved as an amendment the following words which actually appeared in the subcommittee's report:—

> That although the committee does not go so far as to say that in no case can an insured person make a private arrangement with a doctor on the panel for payment of some extra fees, it is of opinion that the practice is to be deprecated.

Mr. Brackenbury urged that although there should be no extra charges within the insurance contract, the agreement did not cover every conceivable set of circumstances; in fact, there were circumstances which were expressly excluded by the Act. Occasions sometimes arose when both doctor and patient felt that the circumstances did not come within the insurance contract.

Various members of the committee declared that in no circumstances should extra charges be permitted. On a division only four voted for the amendment, and the recommendation of the subcommittee was approved.

WORCESTERSHIRE INSURANCE COMMITTEE: PRIVATE CHARGES MADE TO INSURED PERSONS.

At a recent meeting of the Worcestershire Insurance Committee, Mr. Willis Bund presiding, a discussion took place on the same point as had engaged the Middlesex Insurance Committee. It appeared that complaints had been received as to panel practitioners charging insured persons for medical attendance and medicines. The General Purposes Committee reported that the County Medical Committee had passed the following resolution:—

> That practitioners on the panel shall discontinue to accept any contract payments from insured persons.

The subcommittee recommended that this be accepted in good faith, and on the understanding that there should be no suggestion of payment on the part of the practitioners or any pressure brought to bear, so that any payment made by an insured person to his panel doctor should be absolutely voluntary.

Dr. C. L. Hawkins objected to the insertion of the words "in good faith" as casting a slur on the medical profession. Dr. H. E. Dixey seconded the deletion of the words.

Mr. G. W. Hobson said there were reasons for the insertion of the words, but he was not going to discuss them in the presence of the press. He hoped the committee would adhere to the paragraph.

Dr. H. E. Moore said the Medical Committee intended that the profession throughout the county should stick to the resolution passed. If the committee obtained precise information showing that any doctor was trying to make insured persons pay for medical attendance against their will, the Insurance Committee would in their action have the full support of the Medical Committee. The charges, however, had never been substantiated. They were told that people would not come forward for fear of intimidation. Charges of this nature, reflecting on the honour of professional gentlemen, should be substantiated, if not they should be quashed at once.

Mr. T. W. Parkes thought the matter should go back to the committee. The doctors had laid themselves open to these charges because of their attitude towards public appointments. The Worcester county council had been boycotted, and Mr. H. C. Gardner and himself had been browbeaten in their own homes by a Worcester doctor. They were not, however, just the sort of public men who would take knocking in that way. There were two sides to the question.

Mr. Brewster said he regretted he was not able to bring forward any names of persons who made complaints. He was positive it could be borne out by several members from Kidderminster that the charges were correct.

Dr. Moore: Do you still say before this committee that doctors are charging insured persons contract rates against their will?

The Chairman: He does not say that. What is said is that certain doctors have asked patients, "Are you subscribing to my club? Because, if so, there is no need for you to go to the chemist for your medicine." If they subscribed to his club he would give them the medicine.

Eleven voted for the deletion of the words "in good faith" and 21 against. The paragraph was then approved.

THE POSITION OF HERBALISTS UNDER THE NATIONAL INSURANCE ACT: THE ACTION OF WORCESTER CITY.

In Worcestershire the County Insurance Committee have decided not to grant the application of insured persons to make their own arrangements with a herbalist, but the Worcester City Committee have twice, after long debate, decided to grant such applications. They did so at a recent meeting despite an earnest appeal by Mr. S. Wellesley Coombs, who presented a strong case against such permission. There were three applications before the meeting, and the committee granted them by 15 votes to 9.

In the course of the debate Dr. H. Neville Crowe asked what answer the applicants had given to the question: "By what doctor do you desire to be attended?" and the Chairman said they had replied, "Mr. Burden, Bridge-street," adding that "the point was not important, as the herbalists might call themselves herbal doctors," when Dr. G. W. Crowe pointed out that if herbalists called themselves doctors they would be liable to a penalty under the Medical Acts.

Dr. Neville Crowe moved as an amendment to a motion that the application should be granted for those persons to make their own arrangements, that "those arrangements should not be with any person not qualified and registered under the Medical Act of 1858." The Chairman did not think that the Committee would be entitled to pass that amendment, which he said was contrary to the spirit of the Act.

Mr. Coombs then proposed that the matter be referred back to the committee, with an instruction to allow the applicants to make such arrangements only with a duly qualified medical practitioner, and in a reasoned speech explained why medical men must oppose such applications. The doctors, he said, would fight the question impersonally; it was entirely a matter of principle. He maintained

that the Act and the Regulations contemplated throughout that the insured patients would only be treated by qualified registered medical men. If they receded from that point they would be going back 100 or 200 years to the days when there were no qualified persons. Referring to the case of emergency, he said no one but a highly trained doctor could detect the earliest signs of diphtheria, smallpox, or anthrax, and in such cases it was imperative that there should be swift and resolute action. It would be impossible for a medical man—say, the medical officer of health—to coöperate with an unqualified person in treatment of tuberculosis. Further, it was illegal for an unqualified man to prescribe, and if the Insurance Committee allowed such a person to prescribe they would be conniving at an illegality. The Government would not allow paupers to be treated by unqualified persons. He maintained that treatment by herbalists could not be "of the nature, quality, and extent not inferior to that under the arrangements made by the Insurance Committee." Whatever was the result of that debate he was glad to be able to relieve his conscience on that point.

Mr. Morris urged that the responsibility could not be said to rest upon the committee, inasmuch as those applicants said that whatever was the decision of the committee they would still go to the herbalist.

The Chairman said his personal opinion was contrary to the applicants', but he thought that as they had faith in herbalism they were entitled to receive that treatment. The applications were granted by 15 votes to 9, the four medical practitioners present being supported by five members of the committee.

THE DEATH OF DR. HORACE DIMOCK.

The tragic death occurred last week of Dr. Horace Dimock in circumstances which, as far as they have been elucidated, have been so freely published that they require no repetition. Dr. Dimock a few days before his death had appeared before the Wisbech magistrates on a charge of criminal libel, information having been laid before the bench by Mr. H. C. Meacock, chairman of the Isle of Ely Division of the British Medical Association. Arising out of this fact the funeral of Dr. Dimock, who was a native of the district, was made the occasion of reprehensible attacks upon the houses of Mr. Meacock and another medical man in the town of Wisbech. The whole story is very distressing.

Mr. Henry Meacock has sent to us for publication a statement, which has appeared substantially in the *Daily Mail*. It is accompanied by a reprint of a letter from Professor Sims Woodhead to the same journal, in which Professor Woodhead, in grave and forcible terms, begs that judgment may be suspended until a thorough inquiry has been held, inasmuch as "the Wisbech doctors, who are accused of persecuting the late Dr. Dimock, have themselves been subject to the foulest slander."

Mr. Meacock in his statement denies categorically that the late Dr. Dimock had been subjected to the boycott or persecution alleged, and asserts that libellous, and in some cases indecent, communications recently received by certain Wisbech medical men, had been traced upon evidence of the strongest possible nature to Dr. Dimock. Mr. Meacock states that the filthy nature of the communications made action necessary in the interests of the honour of medical men and of defenceless women, and that such action had been taken under the guidance of the police throughout. The statement reached us too late for publication in full.

A meeting of the Isle of Ely Insurance Committee to discuss the matter takes place too late for notice in this issue of THE LANCET.

THE second annual dinner of the Beit Memorial Fellows took place at the Trocadéro Restaurant on Oct. 31st, Dr. F. W. Edridge-Green being in the chair. Mr. Otto Beit and Sir James Kingston Fowler were guests on the occasion.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: JACKSONIAN PRIZE.—The subject for the Jacksonian Prize for the ensuing year, 1914, is the Pathology, Diagnosis, and Treatment of Trigeminal Neuralgia. Dissertations for this prize must be delivered at the College by Dec. 31st, 1914. Dissertations for the Jacksonian Prize for the present year, 1913, must be delivered at the College not later than 4 P.M. on Dec. 31st next.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle*: Dr. Eugen Ludwig has been recognised as *privat-docent* of Anatomy.—*Berlin*: The title of Professor has been conferred on the following gentlemen who have distinguished themselves in the struggle against tuberculosis but who are not on the teaching staff of the University: Dr. Alfred Bruck, secretary of the Hohenlychen Sanatoria; Dr. Paul Friedrich Köhler, physician to the Sanatorium at Werden-on-the-Ruhr and editor of the Annual Report on Tuberculosis Research; Dr. Otto Ernst Roepke, physician to the Railway Sanatorium near Cassel and editor of several tuberculosis reports, one of which appears in seven languages.—*Naples*: Dr. Giuseppe Palazzo has been recognised as *privat-docent* of External Pathology; and Dr. Camillo Pellegrino as *privat-docent* of Orthopædics.—*Rome*: Dr. Carlo Brunetti has been recognised as *privat-docent* of External Pathology; and Dr. Silvio Settimi as *privat-docent* of Odontology.—*Siena*: Dr. Luigi Guerra-Coppioli has been recognised as *privat-docent* of Internal Pathology.—*Vienna*: Dr. Erich Ruttin has been recognised as *privat-docent* of Otiatry.

CANCER PRECAUTIONS IN PORTSMOUTH.—A new procedure for securing the earlier surgical treatment of those suffering from cancer was adopted by the Portsmouth town council at their meeting on Oct. 28th. The health committee, after consultation with the medical officer of health, recommended that information should be given to the public by which the disease might be identified. For this purpose it was suggested that a meeting should be called to which the nurses of the town and ladies interested in social, medical, and charitable work should be invited, when an address should be given by a surgeon who was a member of the town council, and that provision should be made for the microscopical examination of material in connexion with cancer free of charge. After a discussion, in which it was argued that such a procedure was likely to frighten people and do more harm than good, the report was adopted.

SIXTH INTERNATIONAL DENTAL CONGRESS.—At this Congress, to be held in London from August 3rd to 8th, 1914, under the patronage of H.M. the King, there will be an International Congress Museum, comprising the following sections:—1. Dental Anatomy, Histology, and Physiology. 2. Dental Pathology and Bacteriology. 3. Dental Surgery and Therapeutics. 4. Dental Physics, Chemistry, Radiography, and Metallurgy. 5. Dental Prosthesis. 6. Orthodontics. 7. Oral Surgery and Surgical Prosthesis. 8. Anæsthesia. 9. Oral Hygiene, Public Instruction, and Public Dental Services. 10. Dental Education. The officers consist of the chairman, Mr. A. Hopewell-Smith; the honorary general secretary, Mr. F. N. Doubleday; and eight other honorary curators. It is intended that the museum shall be an international collection of objects of interest, and be representative of every section of the Congress. Its nature and scope include the following:—

1. Specimens showing the evolution of tooth forms and of the dentition of man, with histological preparations bearing upon recent research, and exhibits illustrating the chemical composition and physiological action of the saliva.
2. Specimens of morbid conditions of the teeth, palate, gums, and jaws, photomicrographs and cultures of oral micro-organisms, and new bacteriological apparatus and appliances.
3. Specimens and slides of teeth, gums, and jaws affected by pyorrhœa alveolaris. Exhibits of various new methods of "inlaying" cavities and of "crowning" teeth.
4. Radiographs of the normal and diseased dental tissues.
5. Exhibits of various kinds of articulators, and specimens showing the various methods of "pressure casting" and the modern forms of continuous-gum work.
6. Models showing abnormalities in position of the teeth and appliances for their correction.
7. Specimens illustrating methods of dealing with surgical conditions of the teeth and jaws, including cleft palate, harelip, fracture and resection of the jaws.
8. Specimens illustrating the history and evolution of anæsthesia.
9. Photographs, charts, diagrams, specimens, and statistics of school clinics, and methods for the instruction of the public in the principles of oral hygiene.
10. Instruction forms, charts, diagrams, specimens, and demonstration models used in relation to dental education.
11. Historical objects of interest, such as books, instruments, and pictures.

Regulations and application and entry forms for intending exhibitors may be obtained on application to Mr. A.

Hopewell-Smith at the International Dental Congress Office, 19, Hanover-square, London, W., who earnestly invites the coöperation of all in making the Museum and the Congress a memorable success.

PENZANCE BOARD OF GUARDIANS AND THE DENTAL TREATMENT OF CHILDREN.—The Local Government Board has sanctioned the appointment of Mr. W. D. Motton, L.D.S. Eng., for one year as dental surgeon to the children at the Penzance workhouse, the remuneration to be by fees as arranged by the guardians.

KING'S COLLEGE HOSPITAL.—The out-patient department and a portion of the wards of the new King's College Hospital at Denmark Hill will be opened for the reception of patients on Monday, Nov. 10th.

THE annual festival dinner of the West Ham and Eastern General Hospital will be held at the Hamilton Hall, Liverpool-street Hotel, on Thursday, Nov. 20th, at 7.30 P.M., when the chair will be taken by Mr. Lionel A. Martin.

INVITATIONS have been issued by the Master and Wardens of the Society of Apothecaries to the annual dinner in the Society's Hall, Blackfriars, E.C., on Friday, Nov. 28th, at 7 o'clock, to meet the Lord Mayor and Sheriffs of London.

TAUNTON MEDICAL CHARITIES.—As the result of a carnival recently held in Taunton the sum of £100 has been given to the Taunton and Somerset Hospital, £75 to the Taunton District Nursing Association, £30 to the Bristol Eye Hospital, and £18 to some smaller Taunton medical charities.

LITERARY INTELLIGENCE.—The publication of a "Text-book of Medical Entomology," by Walter Scott Patton, M.B. Edin., I.M.S., of the King Institute of Preventive Medicine, Guindy, Madras, and Francis William Cragg, M.D. Edin., I.M.S., of the Central Research Institute, Kasauli, Punjab, with 89 full-page plates, is announced by the Christian Literature Society for India, whose English address is 35, John-street, Bedford-row, London. The price of the book is 1 guinea net, or in India Rs. 15. 12 net.

THE LATE MR. WALTER WHITEHEAD.—Mr. Henry Whitehead has bought a site in Bury for the erection of a clock tower over 50 feet high in memory of his brother, Walter Whitehead, who was a native of the town of Bury. It was the duty of the mayor, Alderman J. Parks, to convey the notice of the gift to the town council, which duly accepted it. Mr. Parks and the late Walter Whitehead were fellow students, and when Whitehead commenced practice in 1866—at Mansfield Woodhouse, Nottinghamshire, Mr. Parks assisted the young surgeon at some of his operations.

THE LADIES' GUILD OF ST. THOMAS'S HOSPITAL.—The ninth annual meeting of this guild was held in the Governors' Hall of St. Thomas's Hospital on Nov. 4th. The Countess Beauchamp presided, and there were present over 250 members and friends. Mrs. H. B. Irving gave a delightful address, and the honorary secretary, Mrs. Battle, presented a very satisfactory report, which, together with the financial report presented by Miss South, the honorary treasurer, tended to show that the guild was very prosperous and had done most excellent work. It had provided this year 2973 garments, more than half of which had been given to patients going to convalescent homes and who lacked the necessary outfit; the rest of the garments were for use in the wards of the hospital. Last year's deficit of £10 had been covered, but there was only a balance of 4*s.* 11*d.* to carry forward to the next year's accounts, and the committee would welcome new members and subscribers to help to carry on the work. The following officers and members of the executive committee were elected for the following year:—Chairman of Committee: Mrs. Ballance. Committee: Mrs. Belfrage, Mrs. Burrell, Mrs. Corner, Mrs. Hayward, Miss G. Lawford, and Mrs. Z. Mennell. Permanent Member of Committee: Miss Lloyd Hill, matron of St. Thomas's Hospital. Honorary Secretary: Mrs. Battle. Honorary Treasurer: Miss South. Honorary Work Secretary: Miss Clerk. Mr. Wainwright expressed his gratitude as treasurer of the hospital to the members of the guild, whose work helped so greatly to increase the comfort and well-being of the patients and to add to the efficiency of the hospital. After the meeting many members and their friends visited the wards of the hospital.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BROWN, A. E., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

COHEN, BERTRAM, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Victoria Cottage Hospital, Sidmouth.

CORBIN, H. E., M.R.C.S., L.R.C.P. Lond., D.P.H. R.C.P.S., has been appointed Health Officer for Calcutta.

COURT, A. C. S., M.D., B.S. Edin., has been appointed Casualty Surgical Officer at University College Hospital.

DEAN, H. J., L.R.C.P. Irel., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Willenhall District of the county of Stafford.

DINGLEY, L. A., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

FINLAY, D. E., M.B., B.S. Lond., has been appointed Physician to the Gloucestershire Royal Infirmary.

HEPTINSTALL, R. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Shefford District of the county of Bedford.

HERN, JOHN, M.D. Edin., F.R.C.S. Edin., M.R.C.S., has been appointed in Charge of the Ear, Nose, and Throat Department at Darlington Hospital.

HOWELL, B. WHITCHURCH, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon at the Royal National Orthopædic Hospital.

KING, G. B., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

KINGSBURY, W. H., M.R.C.S., L.R.C.P., has been appointed Medical Officer to the X Ray and Electrical Department at the Hampstead and North-West London Hospital.

LETCHWORTH, T. W., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon to Out-patients at the Hampstead and North-West London Hospital.

LISCOMBE, R. H., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

O'CALLAGHAN, H., M.B., Ch.B., has been appointed House Surgeon at the Hampstead and North-West London Hospital.

SANDERS, W. B., M.B., B.S., has been appointed Obstetric Assistant at University College Hospital.

SCOTT, E. P., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Casualty Officer at the Hampstead and North-West London Hospital.

SHAW, R. K., M.B., Ch.B. Edin., has been appointed Assistant Casualty Officer at the Hampstead and North-West London Hospital.

STEVENSON, WILLIAM FLEMING, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Ilfracombe District by the Barnstaple (Devon) Board of Guardians.

TERRY, HAROLD CAIRNS, M.B., Ch.B. Birm., has been appointed Assistant Physician to the Gloucestershire Royal Infirmary.

WELCH, CUTHBERT G., M.D. Lond., D.P.H. Oxon., has been appointed Tuberculosis Officer to the County of Bedford.

WILSON, O. R. L., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Hampstead and North-West London Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARGYLE AND BUTE ASYLUM, Lochgilphead.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, and laundry.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with lodging, board, and washing.

BERMONDSEY MEDICAL MISSION, 44, Grange-road, Bermondsey, S.E.—Female Junior Resident Assistant. Salary £70 per annum, with board and lodging.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Second and Third Assistant Medical Officers. Salary at rate of £120 and £100 per annum respectively, with board, residence, and washing.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and laundry.

BIRMINGHAM, QUEEN'S HOSPITAL.—Radiographer. Salary £100 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Pathologist. Salary £50 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with apartments, board, and laundry. Also House Physician, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—House Surgeon for six months for Throat, Nose, and Ear. Salary £75 per annum, with board, apartments, and laundry. Also Dental House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry. Also Honorary Assistant Physician.

BURY INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and washing.

CALDBRIDGESHIRE COUNTY COUNCIL.—Tuberculosis Officer. Salary £300 per annum.

CARDIFF, KING EDWARD VII. WELSH NATIONAL MEMORIAL ASSOCIATION.—Tuberculosis Physicians. Salary £450 per annum.

CARSHALTON, QUEEN MARY'S HOSPITAL FOR CHILDREN.—Senior Assistant Medical Officer. Salary £250 per annum, with board, lodging, and washing.

CHARING CROSS HOSPITAL.—Assistant Physician.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, lodging, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

CORNWALL EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, &c.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

DUNDEE ROYAL INFIRMARY.—House Surgeon.

EAST SUSSEX COUNTY COUNCIL EDUCATION COMMITTEE.—Junior Assistant School Medical Officer. Salary £250 per annum.

ESKDALEMUIR PARISH COUNCIL.—Medical Officer. Salary £80 per annum.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn Circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, and lighting.

GLASGOW DISTRICT MENTAL HOSPITAL, Gartloch.—Junior Medical Officer. Salary £200 per annum, with board, lodging, and laundry.

GLASGOW DISTRICT MENTAL HOSPITAL, Lenzie.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, attendance, and laundry.

GLASGOW UNIVERSITY.—Additional Examinerships.

HAMMERSMITH INFIRMARY, Ducane-road, Wormwood Scrubs, W.—Second Assistant Medical Officer of Infirmary and Workhouse. Salary £130 per annum, with board, lodging, washing, and attendance.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £30 per annum, with residence, board, and washing.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HEREFORD, HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board, residence, and washing.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Two Assistant Physicians.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Surgeon to Out-patients.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for six months. Salary at rate of £30 per annum, with board and lodging.

ITALIAN HOSPITAL, Queen-square, W.C.—House Surgeon for six months. Salary £60 per annum, with board and residence.

KELLING SANATORIUM, Norfolk.—Assistant Resident Medical Officer, unmarried. Salary £70 per annum, with board, lodging, and laundry.

KENSINGTON WORKHOUSE AND INFIRMARY.—Second Assistant Resident Medical Officer. Salary £110 per annum, with apartments, board, and washing.

LEEDS GENERAL INFIRMARY.—Resident Obstetric Officer for six months. Salary £50 per annum, with board, residence, and laundry.

LEEDS, KILLINGBECK SANATORIUM FOR TUBERCULOSIS.—Assistant Medical Officer, unmarried. Salary at rate of £120 per annum, with board, lodging, and washing.

LEEK, STAFFORDSHIRE, COUNTY MENTAL HOSPITAL, Cheddleton.—Junior Assistant Medical Officer. Salary £210 per annum, with board, apartments, and washing.

LEICESTER BOROUGH MENTAL HOSPITAL, Humberstone.—Junior Assistant Medical Officer, unmarried. Salary £240 per annum.

LEWES VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary at rate of £100 per annum, with rooms, board, and washing.

LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL—Assistant Tuberculosis and Assistant School Medical Officers. Salary £300 per annum.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with board and residence.

LONDON LOCK HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board and residence.

MANCHESTER, BAGULEY SANATORIUM FOR TREATMENT OF TUBERCULOSIS.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House Surgeons in the Obstetrical, Gynæcological, and Children's Departments. Salary at rate of £50 per annum, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Surgeon.

MIDDLESEX HOSPITAL, W.—Assistant Dental Surgeon.

NEWCASTLE-ON-TYNE DISPENSARY.—Resident Medical Officer. Salary £250 per annum, with apartments, &c.

NORTHAMPTON GENERAL HOSPITAL.—Senior Resident Medical Officer, unmarried. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NORWICH, JENNY LIND INFIRMARY FOR CHILDREN.—Resident Medical Officer (female) for six months. Salary £50 per annum, with board, apartments, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Resident Surgical Officer, unmarried. Salary £100 per annum.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon for six months. Salary at rate of £30 per annum, with residence, board, and laundry.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

PADDINGTON INFIRMARY.—Second Assistant Medical Officer. Salary at rate of £40 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £90 per annum, with board, residence, and washing.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, apartments, and washing.

ROUSAY AND EGILSHAY, PARISH OF.—Resident Medical Officer. Salary £71 per annum.

ST. GILES AND BLOOMSBURY INFIRMARY, Cleveland-street, Fitzroy-square, W.—Medical Superintendent. Salary £300 per annum, with residence, light, fuel, and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Casualty House Surgeon for six months. Salary £100 per annum, with board and lodging.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Junior Resident Medical Officer for six months. Salary at rate of £70 per annum, with residence, board, and laundry.

ST. MARYLEBONE INFIRMARY, Rackham-street, Notting Hill, W.—Third Assistant Medical Officer, unmarried, for six months. Salary £50, with apartments, rations, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, &c.

SHEFFIELD, CITY INFECTIOUS DISEASES AND TUBERCULOSIS HOSPITALS.—Assistant Medical Officer. Salary £130 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon for six months. Salary £80 per annum, with board and residence.

SURREY COUNTY COUNCIL EDUCATION COMMITTEE.—Three Assistant School Medical Officers. Salary £400 per annum each.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, attendance, &c.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Assistant in the Chemical Pathology Department. Salary £100 per annum, with luncheon. Also Surgical Registrar. Also Resident Medical Officer.

UNIVERSITY OF LONDON.—Examiners.

UNIVERSITY OF LONDON, KING'S COLLEGE.—Demonstrator of Anatomy. Salary £100 per annum.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, and washing.

WEST BROMWICH, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

WEST HAM UNION SICK HOME, Forest-lane, Forest Gate.—Second Assistant Resident Medical Officer. Salary £120 per annum.

WEST LONDON HOSPITAL, W.—Assistant Dental Surgeon. Also Second X Ray Officer.

WEST RIDING COUNTY COUNCIL.—School Oculist. Salary £300 per annum. Also Three School Dentists. Salary £250 per annum. Also Three School Medical Inspectors. Salary £300 per annum.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, W.—House Surgeon. Salary £100 per annum.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with rations, apartments, and washing.

WORKSOP, VICTORIA HOSPITAL AND DISPENSARY.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, light, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Whitland, in the county of Carmarthen; at Warrenpoint, in the county of Down; at Flint, in the county of Flint; and at Matlock, in the county of Derby.

Births, Marriages, and Deaths.

BIRTHS.

HENDERSON.—On Oct. 29th, at Rodney-street, Liverpool, the wife of Dr. W. Savile Henderson, of a son.

MARRIAGES.

MERCIER—MACDOUGALL.—On Oct. 29th, at St. Pancras Church, London, Charles Arthur Mercier, M.D., F.R.C.P., F.R.C.S., of Parkstone, Dorset, to Mary MacDougall, youngest daughter of the late Donald MacDougall, of Glasgow.

STRUTHERS—BURGESS.—On Nov. 1st, at St. Jude's, Birmingham, by the Rev. Lester Pinchard, J. A. Struthers, M.B., Ch.B., of Stanley-road, Bootle, to Jean, daughter of the late James Burgess, Macclesfield.

DEATHS.

NETTLESHIP.—On Oct. 30th, at Longdown Hollow, Hindhead, Edward Nettleship, F.R.S., F.R.C.S., aged 68 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HEALTH OF SIERRA LEONE.

A REPORT on the Colony of Sierra Leone for the year 1912, prepared by Mr. A. C. Hollis, C.M.G., has been issued. It gives the population of the colony as 75,572 (41,001 males and 34,571 females), and estimates the population of the Protectorate at 1,327,560, of whom 1,323,151 are natives other than those in military barracks, the remainder, 3426, being non-natives. The European residents in the colony and Protectorate number, as nearly as can be ascertained, 803, including 389 military and 230 officials. In the colony the birth-rate and death-rate for the year were both 17 per 1000. In Freetown, the capital, which has a population of 34,090, the birth-rate was 17 and the death-rate 22 per 1000. The seven chief causes of death were in order given as follows: (1) Diseases of the circulatory system; (2) diseases of the digestive system; (3) diseases of the respiratory system; (4) diseases of the urinary system; (5) debility; (6) malaria; and (7) blackwater fever. Only about 25 per cent. of the deaths registered were certified to by medical practitioners. The general health of the European population continued to be fair during 1912. Eleven deaths of Europeans were assigned to the following causes: Blackwater fever, 2; malaria, dysentery, hæmorrhage into stomach, strychnine poisoning, cardiac failure, cardiac failure and heatstroke, malarial alcoholism, cerebral malaria, and general debility and diarrhœa, 1 each. Ninety-eight European officials were placed on the sick list, the average number of days for each patient being 5·72. There was no case of yellow fever during the year and no epidemic of small-pox. Three cases of trypanosomiasis were reported from the Protectorate dispensaries; 2363 cases of malaria were treated, as compared with 2208 in 1911. Vaccination was carried on as usual both in the colony and in the Protectorate; 10,298 persons were vaccinated—83 per cent. with known success. In 1912 the number of in-patients at the various Government hospitals and dispensaries was 2716, and of out-patients 83,082. 316 operations were performed in the Colonial Hospital, Freetown; of these, 294 were successful; 2 patients were not relieved, and 9 died. Twelve cases of leprosy were under treatment; 6 of the patients died and 3 absconded, leaving 3 in the leper ward on Dec. 31st, 1912. Presentation swords and certificates have, as usual, been awarded to those native chiefs whose zeal in promoting the sanitary condition of their chiefdoms has appeared to merit recognition, and the interests of sanitation were appreciably advanced in 1912 both in the colony and in the Protectorate. In Freetown the extended gratuitous distribution of quinine, first instituted in 1911, was carried on successfully. The number of destroyed rats brought to the Colonial Hospital, and paid for at the rate of 1*d.* each, amounted to 2400. At Freetown in 1912 the mean shade temperature was 80·7° F., the highest point recorded being 99·2° in March and the lowest 62·2° in November. The rainfall measured 130·07 inches, as compared with 146·59 inches in 1911.

THE CASE OF MR. H. T. HAMILTON.

To the Editor of THE LANCET.

SIR,—The donations already acknowledged amount to £52 3*s.*, to which I have now to add the following: Dr. Abernethy, Barnes, £2 2*s.*

I am, Sir, yours faithfully,

W. H. GIMBLETT, M.D.

86, Sutherland-avenue, Maida Vale, W., Nov. 4th, 1913.

THE ANNALS OF SYPHILIS.

William Wadd, who was surgeon-extraordinary to George III., made a small collection of racy memoirs, among which are several curious historical naratives concerning syphilis. He mentions the suggestion of a facetious writer of the sixteenth century that the disease is of great antiquity; for, "whether, with physicians," says he, "we call it Lues Venerea, with 'pothecaries, the Venereal Disease, with ladies, the French Distemper, or with fine gentlemen, by that short name so commonly used in the time of Congreve and Wycherley, I am persuaded that it is as old as the days of Hercules." Be that as it may, Wadd says that it did not appear in Europe till the reign of Henry VII. Twelve years after the reign of that monarch had begun a proclamation was issued at Edinburgh, commanding all persons afflicted with "a contagious sikness, callit the grand gore that they pass forth and compair upon the Sandis of Leith, at ten hours before none; and thair sall have and find botis redie in the Haven, ordainit to them be officians of this burgh, reddelie furnisht with victuals, to have them to the Inch (Inch Keith) there to remain quhill God provyde for their health." They were transported there, says Wadd, "ne quid detrimenti respublica caperet"—a tolerably strong proof of the then virulence of the disease. So infectious was the disease considered, that one of the articles of accusation brought by the peers against Wolsey in the thirtieth year of the reign of Henry VIII. was, that "Knowing himself to have the foul contagious disease ..... he came daily to your Highness, rowning in your ear, and blowing upon your most noble grace, with his perilous and infectious breath." One of the first who appeared with a specific was Thomas Glanfield, who in the reign of Edward VI. acquired great fame by introducing guaiacum as a remedy. Jacob Berenger shortly afterwards treated the disease by mercurial ointment. It is recorded that his success procured him so much fame and money that he grew insolent and answered in a most contemptuous manner the Pope and the King of Spain, who had graciously invited him to practise at their courts. Some interesting references to the history of the disease are to be found in a book on the "Diseases of Tradesmen," by Bern. Ramazzini, professor of physic at Padua. In the English edition of this treatise, which was published in 1705, it is stated that "as soon as the dismal plague of the Pox flew from the siege of Naples all over Italy, and run from thence like lightning to all the parts of Europe, the chief and principal remedy they found out for controuling the fierce contagion was mercury; and to this very day the same remedy is still in vogue, being further recommended by the continued experience of two ages." Ramazzini goes on to say that the ancient physicians had observed that nothing was more effectual than mercury against the "wild running scab or itch," so that by analogy it was concluded that "since pocky persons had bloches and ulcers in their skin, mercury must likewise be of use to them, and experience justified the inference." Ramazzini also mentions James Berengarius, commonly called Carpus from his country, as the first author of the mercurial inunction. He was, says the professor of Padua, "the most noted surgeon and anatomist of those times; witness his works, from which, as being very rare and hard to come at, the modern anatomists have culled a great many important things without mentioning his name." Ramazzini further remarks that "Fallopius, in his treatise of the Pox, tells you that Jacobus Carpensis got above 50,000 Ducats of Gold only by curing the Pox with inunction; and that he killed many, tho' he cured the greatest part. For a certainty, this anointer knew better than the alchymists how to make a true metamorphosis of mercury into gold; a happyness sure that's very uncommon and far diffirent from what appears in the times we live in, which struck even Sennectus himself with admiration."

SO-CALLED RITUAL MURDER.

To the Editor of THE LANCET.

SIR,—The following extract from "Popular Errors," by John Timbs, published in 1841, may be of interest to your readers in connexion with the above subject:—

"One of the causes of the persecution of the Jews arose from a notion that they killed the children of Christians in order to use their blood in medicine. Gower, in his second book 'De Confessione Amantis' (first printed by Caxton), states it to have been prescribed to Constantine for the cure of his leprosy, but that he refused to try the medicine, and for that piety was miraculously healed:

> 'Thei would him bathe in childes bloode,
> Within seven winters' age,
> For as thei sayen, that shulde assuage
> The lepre.'

The Jews have likewise been charged with using human blood as an ingredient of the food compounded for the Passover festival. This abominable charge was revived in the year 1840, and gave rise to the disgraceful persecution of certain Jews at Damascus; but, for the honour of humanity, the atrocious accusation has been satisfactorily refuted and proved altogether groundless.

Mr. Salomons, who wrote a small volume upon this painful subject ('An Account of the Recent Persecutions of the Jews at Damascus,' by D. Salomons, Esq., 1840), argued that—

'The strict injunction against the use of blood in food is ever regarded as one of the highest importance by those who adhere to the principles of the Jewish religion. Were it possible to imagine for a moment that the Jew could be so lost to every feeling of nature as to engage in a murder for the attainment of any ordinary purpose whatever, it may be safely asserted that, dependent as the Jews are entirely on their religious teachers, it would be an entire violation of all their principles to interfere in any matter connected with religious objects without the express direction of their rabbinical authorities. The remark, therefore, lightly made, that superstitious, fanatical Jews may, in a spirit of Eastern bigotry, do what other persons of the same faith, but not imbued with the same sentiments, would hesitate to commit, is quite fallacious. A total ignorance of the nature and structure of the Jewish religion is exhibited by those who make this observation.'"

I am, Sir, yours faithfully,

London, Nov. 1st, 1913. A GENTILE.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Sir William Crookes, O.M.: The Preparation of Eye-preserving Glass for Spectacles.—Mr. A. W. Porter: On an Inversion Point for Liquid Carbon-dioxide in Regard to the Joule-Thomson Effect.—Mr. A. W. Porter and Mr. F. W. Edridge-Green: Negative After-images and Successive Contrast with Pure Spectral Colours.—Prof. O. W. Richardson: The Positive Ions from Hot Metals.—Mr. G. W. Walker: (1) The Diurnal Variation of Terrestrial Magnetism; (2) A Suggestion as to the Origin of Black Body Radiation.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF SURGERY (Hon. Secretaries—John Murray, Raymond Johnson): at 5.30 P.M.

Adjourned Discussion:
On Mr. Frank Kidd's paper on Pyeloradiography.

The following will take part in the discussion:—Mr. Gilbert Scott, Mr. Thomson Walker, Mr. John Pardoe, Mr. Ralph Thompson, Mr. A. E. Johnson, and others.

WEDNESDAY.

SECTION OF SURGERY: SUB-SECTION OF PROCTOLOGY (Hon. Secretary: P. Lockhart Mummery): at 5.30 P.M.

Mr. Aslett Baldwin: (1) Notes of a Case of Round-celled Sarcoma of the Rectum with Microscopic and Macroscopic Specimens; (2) Notes of a Case of Recto-uterine Fistula.
Mr. Lockhart Mummery: Case of Hæmorrhagic Proctitis.

Specimens:
(1) Hyperplastic Tuberculosis of the Colon.
(2) Cancer of the Sigmoid.

Papers:
Mr. Sampson Handley: A New Method of Administering Saline after Abdomino-perineal Excision of the Rectum.
Mr. Lockhart Mummery: Hæmorrhagic Proctitis, with cases.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries—W. Essex Wynter, Thomas H. Kellock): at 8.30 P.M.

Cases:
Dr. F. Parkes Weber: (1) Rheumatic Nodules (Rheumatismus nodosus of German authors) Associated with Rheumatic Torticollis; (2) Angiokeratoma with Bony Changes.
Mr. W. J. Midelton: Arthritis Deformans Treated with Continuous Counter-irritation.
Dr. A. M. Gossage: Subcutaneous Granulomata in a Child.
Dr. A. F. Hertz and Dr. W. Johnson: (1) Amyotonia Congenita; (2) Cervical Rib causing Vascular, Motor, and Sensory Symptoms.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on the Treatment of Neurasthenia (introduced by Dr. J. S. R. Russell). Followed by Sir Victor Horsley, Dr. J. Taylor, Dr. G. Stewart, Mr. D. Armour, Dr. T. B. Hyslop, Dr. L. Guthrie, Dr. T. J. Horder, Dr. M. B. Wright, Dr. A. G. Buchanan, and Dr. C. Fothergill.

HUNTERIAN SOCIETY, London Hospital, Mile End-road, E.

WEDNESDAY.—4 P.M., Clinical Afternoon.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY.—9 P.M., Dr. F. Langmead: Chorea.

UNITED SERVICES MEDICAL SOCIETY, Royal Naval Medical College, Greenwich.

THURSDAY.—5 P.M., Surgeon C. Ross, R.N.: Tubercle in the Navy.

CHILD STUDY SOCIETY, LONDON, Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.

THURSDAY.—7.30 P.M., Dr. M. H. Vaughan: Care of Children under School Age.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Board Room of the Great Northern Central Hospital, Holloway-road, N.

THURSDAY.—8.30 P.M., Clinical Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Dr. C. A. Mercier: Astrology in Medicine. (Fitz-Patrick Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. W. Goodall: Common Errors in Diagnosis—Infectious Diseases.

TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Mr. E. Corner: Common Errors in Diagnosis—Abdomen.

WEDNESDAY.—4 P.M., Mr. A. E. Johnson: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. W. Stuart-Low: Common Errors in Diagnosis—Nose.

THURSDAY.—4 P.M., Mr. C. W. Rowntree: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. McCann: Common Errors in Diagnosis—Gynæcology.

FRIDAY.—4 P.M., Mr. R. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Saunders: Examination of the Stomach and its Contents.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Slight Cases of Gastric Disorder; Indigestion.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Saunders: Severe Cases of Gastric Disorder.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Surgical Diseases of Children.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Mr. Addison; Surgical Diseases of Children.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Bigg: Throat, Nose, and Ear.——2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.30 P.M., Special Lecture:—Mr. I. Back: Carcinoma Recti.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. P. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery. 3.15 P.M., Special Lecture:—Dr. L. V. Cargill: Optic Neuritis.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Bigg: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Sir James M. Davidson: Localisation by Means of X Rays and Stereoscopic Skiagraphy.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine 3.15 P.M., Mr. L. McGavin: Surgery. 2.15 P.M., Special Lecture:—Sir John R. Bradford, K.C.M.G.: Dropsy and its Treatment.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——10 A.M., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—2 P.M., The Diagnosis of Disease by X Rays (Dr. Metcalfe). Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3 P.M., Selected Cases illustrating Visceroptosis. 4 P.M., Lantern-demonstration illustrating Diseases of the Tongue.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

Course of Lectures on the Neuroses and Psychoses of Children:—

TUESDAY.—2 P.M., Dr. F. Warner: Systematic Examination of Children.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. Hartley: Intra-thoracic Growths.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Localisation of Intracranial Tumours.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Tooth: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—4 P.M., Dr. J. L. Bunch: Itching Skin Diseases and their Treatment.

THURSDAY.—6 P.M., Dr. M. Dockrell: Syphilis (continued)—Papular (I., Miliary; II., Lenticular; III., Squamous; IV., Moist. Pustular (I., Small; II., Large), Nodular and Gummatous.

MANCHESTER HOSPITALS POST-GRADUATE CLINIC.

TUESDAY.—SALFORD ROYAL HOSPITAL—4.30 P.M., Dr. H. J. Ashby: Heart Disease in Childhood.

WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Dr. R. T. Williamson: Bulbar Paralysis and Amyotrophic Lateral Sclerosis.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Dr. C. H. Melland: Some Methods of Blood Examination.

FRIDAY.—ROYAL EYE HOSPITAL—4.30 P.M., Dr. J. G. Clegg: Choroiditis.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICAL DEMONSTRATIONS.

TUESDAY.—SHEFFIELD ROYAL HOSPITAL.—3 P.M., Dr. A. Hall: The Knee-jerk.

FRIDAY.—SHEFFIELD ROYAL INFIRMARY.—3 P.M., Mr. A. W. Cuff: Clinical Surgical Cases.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Tranverse Presentation. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Multiple Pregnancy. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Vulvar and Vaginal Tumours. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

The following Congresses, Conferences, and Exhibitions are announced for 1913:—

Nov. 7th–15th (London, Olympia).—Twelfth International Motor Exhibition.

In 1914:—

April 14th–18th (New York).—Fourth Congress of the International Surgical Society.

May 1st–Nov. 1st (Lyons).—International Town Life Exhibition.

July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.

„ 8th–13th (Edinburgh).—Congress of the Royal Institute of Public Health.

Aug. 3rd–8th (London).—Sixth International Dental Congress.

„ 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.

Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.

September (Vienna).—Third International Congress for Diseases of Occupation.

(London).—Anglo-American Exhibition.

(Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.

(Auckland, N.Z.).—Australasian Medical Congress.

(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

(Washington, D.C.).—International Congress of Americanists.

(Paris).—Fourth International Medical Congress on Industrial Accidents.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 5th, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 30	29·54	S.W.	...	94	59	53	52	54	Cloudy
„ 31	29·80	WSW	0·07	90	59	49	48	50	Fine
Nov. 1	29·84	S.W.	0·07	72	57	49	51	51	Overcast
„ 2	29·82	S.W.	0·03	85	59	50	51	53	Cloudy
„ 3	29·97	W.	0·05	84	57	46	46	48	Cloudy
„ 4	30·03	E.	...	80	57	45	46	46	Foggy
„ 5	29·65	S.W.	0·01	81	54	46	52	53	Overcast

The following journals, magazines, &c., have been received:—Medical Magazine, Dominion Medical Monthly, School Hygiene, Edinburgh Medical Journal, Therapeutic Gazette, Albion Magazine, Indian Medical Gazette, Medical World, Magazine of the London School of Medicine for Women, American Journal of Tropical Diseases and Preventive Medicine, British Journal of Dental Science, Child, Journal of Mental Science, Ophthalmoscope, Annales de l'Institut Pasteur, &c.

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